The tribes known as Mosquito or Miskito, Matagalpa, Sumu or Sumo, and Ulva or Woolwa are local variants of the same culture and are treated as one in this file. Three sources have been processed for the file: 1: Conzemius, 2: Kirchhoff, and 3: Pijoan. 1: Conzemius is the basic source, a general ethnographic survey with best treatment of historical data and early contacts, subsistence, religion and curing, material culture and funeral customs. 2: Kirchhoff is essentially a concise abstract of the same material that adds little new information. 3: Pijoan is based on a more recent field study of public health conditions and adds considerable data on the physical condition of the Mosquitos, diseases and diet, and presents a later field check on much of the information in 1: Conzemius. Although the information on the Mosquito is not plentiful, it is fairly well balanced to give an over-all view of most aspects of the culture.]

Processed in 1958-1959.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lads). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tāwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:
a, e, i, o, u, correspond to the sounds of these vowels in German or Spanish.
ai as ai in "aisle."
au as ow in "how."
oi as oi in "boil."
ñ as ng in "sing."
x as Spanish j or German ch in "ach" or Scotch ch in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
All the other letters have approximately the same value as in English.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

the Ulwa inhabit the southern section of the territory in consideration, from Rio Grande to Rio Punta Gorda. 101 131

The Bawihka are limited to Rio Banbana, a large northern affluent of the lower Prinsapolca. The Miskito call them generally *Sumu-sirpi* "small Sumu" or by the misleading name *Twahka*, but among all the Sumu they are known as "Bawihka." This latter name is not mentioned by Lehmann, the latest investigator into the languages of Central America. The Bawihka were formerly also found on the Wawa and Kukallaya, but they were expelled from these regions by the Twahka, and then settled on Rio Banbana. Most of them are living at the village Wasakin (*was-sa-kin*), "Rocks of the black water."

The Kukra formerly occupied the coast and shores of the lagoons from Rio Grande to the southern extremity of Bluefields Lagoon. They have always refused all intercourse with the Miskito and the foreigners, but occasionally communicated with the neighboring Ulwa for trading purposes. Toward the middle of the nineteenth century some rubber cutters ventured into their territory, and at Kukra Hill, northwest of Bluefields, they captured a few Indians who wore nothing but a loincloth of white tunu and a collar of shells and animal teeth. They were taken to Bluefields, but died soon afterwards. After this incursion into their country the remaining Indians went inland to the Rio Siquia, where they apparently became absorbed by their kindred, the Ulwa. At Pearl Lagoon may be met a few Miskito who are mixed with Kukra.

Other Sumu subtribes, which are already extinct now, are the *Yusku* (*Yosko*), *Prinsu*, *Boa*, *Silam*, and *Ku*. The Yusku lived on the rivers Tuma and Bocay; they are said to have been very bad and were exterminated by the other Sumu in the course of prolonged wars. The Prinsu lived on Rio Prinsapolca, which owes its name to them. They intermarried with the Miskito and the offspring became known as *Twila* or *Tongula* who formed a separate tribe speaking a corrupted Miskito but retained many Sumu customs. The Boa lived on the headwaters of Rio Grande, while the Silam and Ku lived along the Waspuk River.

The Spanish historians of the sixteenth century included the Sumu under the general term "Chontal" or "Chondal," a Mexican word which means merely "stranger," "foreigner," and was applied by the Nahuatl to any primitive tribe. In later documents the Sumu are mentioned as "Caribes," "Chatos," "Albatuinas" (from the Miskito *Albawina*) and by a number of other names. To-day the whole group is generally known by the Miskito designations "Sumu" or "Smu," which have already been used by Bell and Wickham. Some writers have mentioned the whole group under the names Twahka and Ulwa, which, properly speaking, should be 101

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

restricted to two subtribes thereof. Lehmann's classification of the Sumu tribes is likewise unsatisfactory. With the word "Sumu" we have a convenient name for the whole of these various dialects; its use will avoid the sad confusion met with still in the recent literature.

All the male Sumu either know Miskito or Spanish (or even both), depending upon their proximity to Miskito or Ladino settlements. A few of them know a little English. Hardly any of the women are, however, able to speak a foreign tongue. Through Miskito many corrupted English words have passed into their speech, while words borrowed from Spanish are not so common.

RELATIONSHIP OF THE MISKITO AND SUMU

The relationship of the Miskito with the Sumu has already been established from linguistic evidence (Lehmann, b: 714–720) and is reenforced by a survey of the ethnology of the two tribes. In this connection the following Sumu tradition, which points toward a common origin, will be interesting. It was recorded in 1904 at *Alami-kanban* (Rio Prinsapolca) from a Sumu named Frederick, by the Rev. G. R. Heath, a Moravian missionary, who resided many years on the Mosquito Coast. The latter communicated it to Lehmann, who published it in 1910 (b: 717–718). This version was later reproduced by Joyce (9–10) and by Alexander (185–186):

> At Kaunapa Hill, on the left bank of Rio Patuca, a few miles below the mouth of Rio Guampú, there is a rock bearing the sign of a human umbilical cord, and from which were born the tribal ancestors, a Great Father (*Mól-sakana* "he who begot us")[3] and a Great Mother (*Itwana* or *Iiski*).[4] The Miskito and the Sumu are the descendants of these two primal ancestors.
>
> The first born were the Miskito who, disobedient and headstrong, as they are still to-day, cared little for the instructions of their ancestors and ran away to the seacoast.
>
> Then the Twahka or Tawahka were born, who consider themselves to this day the nobility among the Sumu.[5]
>
> Then followed the Yusku, who turned to evil ways; for that reason the other tribes made war upon them and almost exterminated them.
>
> The youngest, the Ulwa, being according to the Indian custom the favorites, profited to such an extent by the instructions of the tribal ancestors that they became especially skilled in the secrets of medicine and incantation and won the name of *Boa*, "enchanters."[6]

---

[3] *Wan-bikan* in the Miskito language.

[4] *Yapti-misri*, "Mother Scorpion," or *Yapti-tara*, "Great Mother," in the language of the Miskito.

[5] In Miskito the word *tawakya* means, however, "firstborn" and the parents thus call their first child.

[6] Lehmann (b: 717) says erroneously "Singers," and this error is copied by Joyce (10) and Alexander (185–186). According to my own informants the Boa were a subtribe of the Sumu differing from the Ulwa.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[7]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (27). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Cassiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[7] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15
Garif SA12

THE CARIBBEAN LOWLAND TRIBES: THE MOSQUITO, SUMO, PAYA, AND JICAQUE

By PAUL KIRCHHOFF

INTRODUCTION

The modern *Paya* and *Jicaque* enclaves in the Caribbean Lowlands may not all be the descendants of the people so named by the first explorers (maps 2 and 5). It is possible that the culture of the people first discovered on the coast was similar to that from which the present-day *Mosquito* and *Sumo* culture has evolved, although the north coast probably had culture traits that differed significantly from those of the *Mosquito* and *Sumo*. It is impossible to describe the post-Conquest changes of the culture of the *Paya* and *Jicaque*. It seems reasonably certain, however, that during the past 400 years the east coast people and the people now known as the *Paya* and *Jicaque* have converged culturally. We can, then, describe these peoples as a unit, although hypothetically their cultures have developed out of the ruins of a more complex aboriginal background.

Less important but significant features of the culture may be ascribed to the contact with the *Black Carib* Indians, who were brought to the Bay Islands in 1796 and whose descendants have settled on the mainland. The importance of the early Negro influence has already been noted.

CULTURE

SUBSISTENCE ACTIVITIES

Farming.—A type of slash-and-burn agriculture is employed by all tribes. Every season the men clear new farmlands and burn the slash. Planting and cultivating is done with a digging stick. This is woman's work, except among the *Jicaque* (Von Hagen, 1943), and the women also harvest the crops. Some fields have combinations of crops, such as maize, beans, and peanuts; others are reserved for single crops, especially the tubers.

A list of agricultural products may be found below. Sweet manioc, an important *Mosquito* crop, is grown by all tribes. Bitter manioc, probably introduced by the *Carib*, is important to some *Paya* and *Jicaque*.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

262 ralization can be directly applied to diets in the tropics: the galaxy of
177 nutritional factors are determined by the local situation and the food habits of the people.

164 The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

●101 The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called [144] Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the 101 western region of the Mosquito coast was occupied by the Matagalpa 197 Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

101 The Miskito and small isolated bands of Suma Indians inhabit
361 the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive ad- [146] ditional income from labor with frult companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two wet seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

ETHNOGRAPHICAL SURVEY OF THE MISKITO AND SUMU INDIANS OF HONDURAS AND NICARAGUA

By Eduard Conzemius

INTRODUCTION

131 The Miskito and Sumu inhabit the Atlantic side of Honduras and Nicaragua, from Rio Tinto or Black River (lat. 15° 50′ N.) to Rio Punta Gorda (lat. 11° 30′ N.). While the Miskito are found chiefly along the coast the Sumu are an inland tribe and extend westward within a short distance from the settlements of the Spanish-speaking population.

Together these two tribes occupy the larger part of the vast region generally known by the name of Mosquito Coast. This territory reaches from Cabo Honduras, near Trujillo, to Rio San Juan, at the Costa Rica boundary; that is, from the eleventh to the sixteenth degree north, an extension of about 550 miles by sea. From Cabo Honduras the coast runs at first in an easterly direction, then southeast as far as Cabo Gracias a Dios, whence it extends nearly due south.

103 Columbus, who discovered the country in 1502, gave the name *Costa de Orejas* "Coast of the Ears" to that part situated to the west of Cabo Gracias a Dios. The southern district of the Mosquito Coast became known in those days as *Cariay* or *Cariari*, *Veragua* or *Beragua*, *Castilla del Oro* "Golden Castile." These names were superseded by the Spanish-Mexican terms *Taguzgalpa* and *Tologalpa*, which stuck practically throughout the colonial period.

The name "Mosquito Coast" (Mosquito Territory or Mosquito Shore), employed by the English, has been taken from that of the principal Indian tribe, the Miskito, erroneously called Mosquito; the Spaniards translated it into *Mosquitia* and *Costa de Mosquitos* (*Costa Mosquita*). Many believe that this name has arisen from the numerous mosquitoes to be found in the country, while others think that the small islands off the coast, "which lie as thick as mosquitoes," may have caused the appellation.

193 Orography.—The shore of the Mosquito Coast is partly alluvial and partly coralline; to the south of Cabo Gracias a Dios the land is gaining on the sea, but to the north of that cape the reverse appears to be the case.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

721 selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

721 Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras) 197 to Chiriqui Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

721 The place names belonging to the Miskito language, which may be met with all along the Atlantic shore of Costa Rica and Panama as ● 103 far south as King Buppan's Bluff, owe their origin to the above-mentioned marauding expeditions (Conzemius, a: 300-306). Still permanent settlements were not made by the Miskito on that vast region, the southern limit of their habitat being formed by Pearl Lagoon, where they established themselves during the latter part of the eighteenth century. About that same period they also spread up some of the larger rivers, as the Patuca, Guagua (Wawa), Cucallaya, Prinsapolca, Rio Grande, and especially Rio Coco; on the last-named stream they may be found as far up as Bocay, that is, about 300 miles from the sea by the circuitous course of the river.

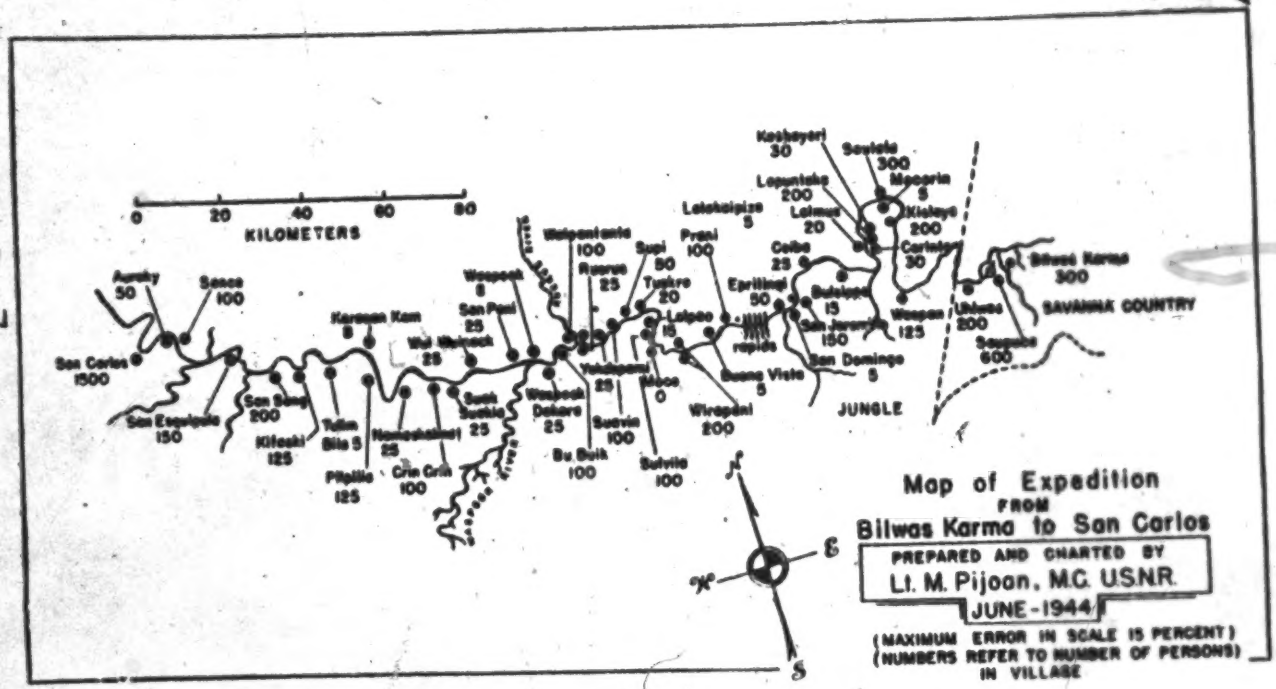
727 TREATMENT OF PRISONERS.—As stated before, the Miskito began their slave-hunting expeditions into the territory of their neighbors 567 toward the end of the seventeenth century. The captive women and children were either kept as slaves (M.: *alba* [1]; S.: *warau*) or they were sold to the Jamaican traders who arrived occasionally on the coast. The boys, when arrived at the age of puberty, were allowed to take a Miskito wife, and the children of such unions grew up as free members of the tribe.

721 Slave-hunting expeditions in seagoing canoes were particularly directed to the Talamanca region (southeastern Costa Rica), where many Tiribi (Terbi) Indians were reduced to slavery. The same fate met the aborigines living around Chiriqui Lagoon (M. W.: 302; Peralta, a: 20, 93, 95; Peláez: II, 156; Young: 35; Conzemius, a: 300–301). Many references to the Miskito slavers may also be

[1] This word has evidently some connection with *albawina*, by which name the Miskito called the Sumu formerly, or perhaps all their Indian enemies in general. The Black Carib or Garif apply to the Miskito the name *idadu*, which word likewise had originally the meaning of "slave." (Compare *ilada* "slave" in Father Gumilla's work.)

487
361
161
103

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15



[p.5]

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

GLOSSARY

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AGOUTI.—A savory rodent (*Dasyprocta* sp.), called "guatuso" by the Ladinos and "coney" by the Creoles.

ANANCY STORY.—An African story having the mythical spider, or ananci, as hero.

ANNATTO.—A shrub or small tree (*Bixa orellana* L.), also known by the Spanish name "achiote" or "achote."

BABOON.—The Creole name for the howling monkey (*Mycetes* sp.); it is also used in British Guiana.

BALSA.—A bombaceous lightwood tree (*Ochroma lagopus* Sw.).

BARBECUE.—To smoke-dry; also the name of the wooden stage upon which the meat is laid to be smoke-dried; also a crude wooden stage erected by the axman to stand upon when engaged in cutting down large trees.

BATANA (Miskito: *batana* "fat," "oil").—A hair oil made by the Miskito Indians of the kernel contained in the seeds of the oil palm (*Elaeis melanococca* Gaertn.).

BATEAU.—A large river canoe.

BIJAGUA.—A marantaceous plant (*Calathea insignis* Peters), the large leaves of which are used as wrapping paper; the Creoles call it by the Miskito name *waha*.

BOCATORA.—Creole name for the yellow fresh-water turtle.

BRATARA (Miskito: *bratara*).—Creole designation for a species of bamboo.

BREADNUT TREE.—A moraceous tree (*Helicostylis ajocha* K. Sch.); it is also known by the Spanish name "masica."

BULPIS.—Miskito name of a skin disease which is very common among the Indians.

CALABASH.—The fruit of a common tree of the Bignonia family (*Crescentia cujete* L.).

CASSAVA.—A valuable food plant (*Manihot* sp.).

CAY.—Island, not necessarily marine, but applied to islets in streams and even to clumps of vegetation; the Miskito use the word *dakura* in the same manner.

CHIGOE.—A species of flea (*Sarcopsylla penetrans*) which penetrates into the flesh and may cause painful sores.

COHUNE RIDGE.—Area dotted with cohune or corozo palms (*Attalea cohune*); the land of such districts is very fertile.

CRAFT.—A small seagoing canoe.

CREEK.—Applied to any tributary of a river.

CREOLE.—Applied to native Negroes, Mulattoes, or Zambos of English speech.

DORY (Miskito: *duri*, *dori*).—A keeled canoe.

FALLS.—Applied also to runs and rapids.

GIBNUT.—Local English name for the paca.

HAULOVER.—Narrow neck of land separating two water sheets, so called from the habit of hauling canoes over them.

HICATEE.—Creole name for the black fresh-water turtle.

HULERO (Local Spanish: *hule* "rubber").—A rubber collector.

ISHWILLY (Miskito: *islu*).—A species of edible lizard.

ISLAND.—*See* "Cay."

JIGGER.—*See* "Chigoe."

1: Conzemius M-4, 5 (1921) 1932
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JOHN CROW.—The black vulture or turkey buzzard.

LADINO.—Applied to the Spanish-speaking Central Americans; the Creoles call them "Spaniards."

LEON.—Common term for the puma or cougar.

MACHETE.—Spanish name for a heavy cutlasslike knife.

MACLALA (Miskito: *waklala*).—Creole name of a small species of lizard.

METATE (Aztec: *metlatl*).—Spanish name for a slightly concave stone on which maize is ground with the aid of another stone shaped like a rolling-pin.

MISHLA (Miskito: *mísla*).—General designation for the fermented beverages of the Indians.

MOLINILLO.—Spanish name for a small stick used to stir a beverage made from ground cacao and maize.

MOUNTAIN COW.—Common name for the tapir.

NANCY STORY.—*See* "Ananey story."

PACA.—A very savory rodent (*Coelogenys paca* or *Cuniculus* sp.), called "tepezcuinte" by the Ladinos and "gibnut" by the Creoles.

PEJIVALLE.—A species of palm (*Guilielma utilis* Oerst.), known to the Creoles by the Indian name *supa*.

PINE RIDGE.—Area dotted with pine trees (*Pinus tenuifolia* Benth.).

PITA.—*See* "Silk grass."

PITPAN.—An unkeeled canoe, used for river travel.

QUAM (Miskito: *kwamu*).—Creole name for the large guan (*Penelope* sp.).

RIDGE.—Zone or belt of vegetation; does not imply elevation.

SILK-COTTON TREE.—A gigantic bombaceous tree (*Ceiba pentandra* Gaertn. or *Bombax* sp.).

SILK GRASS.—A bromeliaceous plant (*Karatas plumieri*), called "pita" by the Ladinos.

SNOOK (Dutch: *snoek* "pike").—A large eatable fresh-water fish, resembling the European pike and equally voracious.

SPANIARD.—*See* "Ladino."

SQUASH.—Local English name for the coati or pisote (*Nasua narica*); the name is also met with in British Guiana.

SUKIA.—The shaman or priest-doctor among the Miskito and Sumu.

SUPA.—*See* "Pejivalle."

TAMAL.—A dish made of crushed maize, which is wrapped in large leaves and boiled in water.

TANIA.—A valuable food plant (*Xanthosoma sagittifolium* Schott.).

TIGER.—Common name for the jaguar.

TOMAGOFF (Spanish: *tamagás*).—A common poisonous snake.

TUBA.—Miskito name for a food fish found in almost every stream.

TUNU.—Miskito name of a tree closely allied to the rubber tree (*Castilla* sp.), the bark of which is pounded into cloth; also applied to any kind of bark cloth.

WABUL.—A nourishing drink made of mashed green bananas.

WAHA.—*See* "Bijagua."

WAIKA (Miskito: *waika* "cousin" or "friend").—Nickname given in British Honduras to all Miskito.

WARREE (Miskito: *wari*).—The white-lipped peccary (*Tayassu* sp.).

WAULA.—Miskito name for the boa snake.

WILD CANE.—A member of the grass family (*Gynerium saccharoides*).

YAM.—A valuable food plant (*Dioscorea* sp.).

YUMU.—Miskito name for a sort of stomach ache.

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Pp. vii, 191; 10 plates; 1 text figure; bibliography; index.

HRAF copy.

[This monograph is based on numerous primary sources published from the sixteenth to the twentieth century. The author has published several other articles and books about Indians of Honduras, Costa Rica and Nicaragua, and is familiar with the peoples of the area through his residence there over a number of years. The cultures of the Mosquito and Sumu are presented here in a fairly well rounded survey, the two compared with each other and occasionally with other nearby peoples. Especially well treated are the history of contact with Europeans, warfare, subsistence, religious beliefs and practices, material culture, and funeral customs. Especially noteworthy are the author's comments on the works of earlier writers. --Analyst]

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Evaluation: Missionary-4, 5
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[This article from the Handbook of South American Indians is a summary of the culture shared by the groups indicated in the title, with exceptional practices of a particular tribe noted in passing. The author is a professional ethnologist who has written extensively on New World anthropology. Brief sections are devoted to the following subjects: subsistence, housing, dress and ornaments, transportation, manufactures, political and social organization, life cycle, warfare, esthetics and recreation, religion, shamanism, and mythology. The bibliographical citations refer to a complete bibliography for the volume which appears on pages 567-609 of the original but has not been processed for the files.]

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Analyst: George R. Bedell

Evaluation: Ethnologist-4
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Columbia University: 302.84 M8554

[This source is the result of a medical survey made during a two months stay in settlements in the Coco River basin in Nicaragua. This survey was a preliminary to forming a health program among the inhabitants. A few pages are devoted to an historical survey and a cultural summary of the modern Indians. The bulk of the work consists of data specifically related to public health: disease factors of the tropical environment, racial and morphological description, and considerable information on the diet, nutrition, and diseases which are most prevalent in the area. The bibliography is contained in the footnotes, and is fairly extensive, but deals primarily with medical subjects rather than the Mosquito culture itself. --Analyst]

Field date: ca. 1945
Analyst: George R. Bedell

Evaluation: Physician-5
Processed in 1958

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SA15 Mosquito SA15

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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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Honduras and Nicaragua had never been fixed; the two last named never recognized the existence of a Mosquito nation, but their effective jurisdiction did not extend to the east of an irregular line reaching from the eighty-third to the eighty-sixth degree west of Greenwich. 175

In those days the project of an interoceanic canal through the Isthmus of Nicaragua was occupying the principal maritime nations of Europe and the United States as well. The latter country had never viewed with favor the continual encroachments of Great Britain upon Central America. But when the English in 1848 took forceful possession of San Juan del Norte, the Atlantic terminus of the projected canal, the North American Republic openly took sides with Honduras and Nicaragua. Pressure from the United States forced England to sign in 1859 and 1860 treaties with Honduras and Nicaragua, by virtue of which the Mosquito Coast was recognized as part of the two Central American republics.

The part of the country situated between Rio Hueso on the north and Rio Punta Gorda on the south and extending inland to 84° 15′ W., was, however, made into a reservation wherein the aborigines were to be allowed a certain autonomy. At the head of this reservation was the King, whose title was now changed to that of "Chief" (*Jefe*).

Most of the Indians, Miskito as well as Sumu, were not living within the boundaries of this newly created territory. The government of the latter was chiefly in the hands of native English-speaking "Creoles" or Jamaican immigrants. These were strongly opposed to Nicaraguan influence. The authorities of the reservation were constantly at odds with those of Managua, and the sovereignty of the Republic was only nominal. In 1881 some of the arising disputes were submitted for arbitration to the Emperor of Austria. Finally in 1894 Zelaya, President of Nicaragua, forcefully took possession of the Mosquito Reservation and ousted the local authorities; the country was then incorporated in the Republic as the *Departamento de Zelaya* (now *Departamento de Bluefields*).

SHORT ACCOUNT OF THE ETHNOGRAPHICAL EXPLORATION OF THE MOSQUITO COAST.—Columbus sailed along the Mosquito Coast from north to south in 1502, but he appears not to have come in contact with either Miskito or Sumu. Between the years 1513 and 1529 the versatile historiographer of the Indies, Gonzalo Fernández de Oviedo (1478–1557), spent some time on the Pacific coast of Nicaragua. His great work, which was not published completely until 1851–1855, deals, however, almost exclusively with the Nicarao and Chorotega as far as Nicaragua is concerned, and only a few vague statements refer to the "Chontales," a general designation under which the primitive tribes of the Atlantic coast were known in those days. Benzoni, Castañeda, Andagoya, García Palacios, and Motolinia all personally 175 114

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visited Nicaragua or Honduras, but the rude Atlantic tribes were entirely ignored by them, just as they were by the other celebrated chroniclers, Gómara, Herrera, and Torquemada.

A few ethnographical details pertaining to the Indians of Rio Patuca (Sumu or Paya) have been left by the Franciscan missionary Espino, who remained in that region from May, 1667, until the beginning of 1668.

The author of the first famous work on the buccaneers, A. O. Exquemelin (name corrupted by the English into Esquemeling and by the French into Oexmelin), who came as an engagé to the West Indies in 1666, visited the Mosquito Coast in 1671 or 1672. He had joined the buccaneers in those days and among them appears to have performed the functions of barber-surgeon. In this capacity he accompanied Morgan on his famous raid on Panama in 1671. From the latter place his vessel sailed northward along the Atlantic shore of Central America, stopping at Bluefields Lagoon where the buccaneers were attacked by Sumu Indians. The vessel then stopped for some time at Cabo Gracias. Exquemelin's work was published in Dutch in Amsterdam in 1678. It was translated in German (1679), Spanish (1681), English (1684), and French (1686). Numerous editions have appeared since in many languages, and the book forms the basis of practically all the popular accounts of the seventeenth century buccaneer captains. The translations have appeared with serious additions, omissions, and alterations, each translator having been endeavoring to present his own country in the most advantageous light. The French translations especially contain additions of other French buccaneers not mentioned in the Dutch original, while the English editions glorify particularly the sack of Panama by Morgan. Exquemelin's work gives some very interesting accounts regarding the Miskito of Cabo Gracias a Dios.

The famous English navigator, William Dampier, who was born in 1652 as the son of a Somersetshire farmer, sailed to the West Indies in his youth. From 1675 to 1678 he was active as logwood cutter in Campeche and in 1680 he joined the buccaneers. In later years Dampier became very celebrated. On board a buccaneer vessel he visited Bluefields Lagoon and the Corn Islands, which enabled him to give us a few ethnographical details regarding the aborigines (Sumu) of those parts and the Miskito of Cabo Gracias a Dios. Dampier's great work, A New Voyage Round the World, which appeared in London in 1697, had a tremendous success and within a few years a great number of editions appeared in English, French, German, Dutch, and other languages.

The Parisian buccaneer, Raveneau de Lussan, a well-educated nobleman, who joined the buccaneers at Santo Domingo in 1684, is the author of a book (Journal du Voyage, etc., Paris, 1689) on the exploits

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of the French and English adventurers in the Pacific Ocean from March, 1685, to December, 1687. Being pursued by superior Spanish forces, these buccaneers abandoned their vessel in the Gulf of Fonseca and walked to the upper course of Rio Coco, down which they descended in rafts to the Miskito settlements around Cabo Gracias a Dios.

The great naturalist, Sir Hans Sloane, has also left us a few details pertaining to the Miskito whom he had met in Jamaica. On the arrival of each new governor of that island the Miskito King came over to Jamaica with a number of his men, as he had a commission from the governor. Sloane had thus occasion to meet these Indians in 1688 and again in 1725.

But the most detailed account of the aborigines of the Mosquito Coast, written in early days, is that of an Englishman, probably a former buccaneer, who signs merely "M. W." (The Mosqueto Indian and His Golden River). He had an intimate knowledge of the Miskito and also gives some details pertaining to the Sumu.

Over 100 years passed until another careful observer has left us an account of the Indian tribes under consideration. Orlando W. Roberts was active as a trader on the eastern coast of Central America from the Gulf of Darien to the Bay of Honduras, (1816–1823). He refers chiefly to the tribe of the Miskito.

During the years 1839 to 1842 Thomas Young was living around Rio Tinto. He was deputy superintendent of the British Central America Land Co., which was endeavoring to colonize that part of the Mosquito Coast. Young had an intimate knowledge of the various tribes of Indians as they really were in those days.

From June to August, 1844, a commission of three Germans (Messrs. Fellechner, Müller and Hesse) was looking over the coastal region of Honduras between Cabo Gracias a Dios and Rio Patuca in order to determine the advisability of establishing a German colony there.

Another German, Julius Fröbel, who was compelled to leave his native country as a result of the political events of 1848, spent some time in 1850 and 1851 around the great lake region of Nicaragua and on the upper Rio Escondido among the Ulwa Indians.

For much valuable information pertaining to the Miskito and Sumu we are indebted to three Englishmen who came to the country in the following years. The most important one among them is Charles Bell, who lived in the country during his youth, from 1846 to 1862, his father being attached to the government of the "Kingdom." He had a very intimate knowledge of that part of the country situated to the south of Rio Coco. Between 1863 and 1868 John Collinson, a civil engineer, made two voyages to the Mosquito Coast, being employed by Commander Pim to survey from Lake Nicaragua

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to Punta Gorda for a proposed railway. The naturalist H. A. Wickham lived in Nicaragua (Rio Escondido and Pearl Lagoon) from October, 1867, to June, 1868, in order to collect birds. His ethnographical notes pertaining to the Ulwa are of great interest.

A few years later the French mining engineer, Paul Lévy, traveled on the Mosquito Coast to carry on researches for the Government of Nicaragua. Among the minor contributors to the ethnology of the Mosquito Coast of the nineteenth century are the following: Bovallius, the Swedish zoologist (1881–1883); K. von Girsewald (1892), who spent six months in the gold regions of Pispis; Bruno Mierisch, the government engineer of Nicaragua, who explored the gold regions between Rio Coco and Rio Grande in 1892 and 1893.

In 1900 the celebrated German traveler, Dr. Karl Sapper, who is intimately acquainted with Central America, visited the Miskito and the Sumu living on and about Rio Bocay. The ethnographical specimens collected by him are in the Stuttgart Museum. A collection of ethnographical and archeological material obtained by Doctor Neuhaus around Rio Escondido about this same period is in the Museum für Völkerkunde (Berlin). The German linguist, Walter Lehmann, also investigated these tribes in the course of his voyage to Central America (1907–1909), but unfortunately the ethnographical part of his studies has not yet appeared. The Honduran schoolteacher, Francisco Martínez, also collected interesting ethnological data during his stay at the Sumu village Guampú on Rio Patuca (1916–17). Unfortunately his various contributions have all appeared in local newspapers and reviews of very difficult access.

Finally mention must also be made of the work done by several Moravian missionaries, especially Heath, Grossmann, Reichel, Martin, Ziock, and Siebörger. The books by Schneider and Brindeau are based nearly exclusively upon the investigations of these missionaries.

Since the war the work has been continued by Americans. H. J. Spinden visited Rio Coco and the coast of Nicaragua in 1917–18, and the coast of Honduras in 1923. Dr. A. H. Schultz, of the Johns Hopkins Medical School, carried on some anthropological studies on the Atlantic coast of Nicaragua, examining 25 Rama and 12 Sumu Indians. During the same year (1924) D. E. Harrower, of the Museum of the American Indian, Heye Foundation, was collecting ethnological specimens during two months among the Miskito, Sumu, and Rama.

GENERAL REMARKS ON THE MISKITO

The Miskito are estimated at about 15,000, which number exceeds that of all the other Indian tribes of the Mosquito Coast combined. They are largely mixed with Negroes, for which reason the Spaniards have called them "Zambos," meaning Negro and Indian half-breed, a name which is appropriate.

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PREFACE

114 This medical survey and the health program connected with it was conceived by Mr. John Collier, who was Commissioner of Indian Affairs, Dr. Manuel Gamio, the Director of the Inter-American Indian Institute, and the Committees of Health and Sanitation of the National Indian Institutes of the United States and Nicaragua, and the Office of Inter-American Affairs.

121 The primary purpose of this study was to ascertain by what measure a health program could be initiated in a sequestered low-land tropical region for inhabitants who were autoctonous Indians to that area. The survey and the program were by no means complete since the main efforts were directed to the salient problems pertinent to the health of the people. Furthermore, considerable emphasis was given to the customs and habits of the Indians since any program in order to survive must be fitted into the lives of the people and the circumstances of the local situation. And, since the writer was specializing in the field of nutrition, the subject received disproportionate study.

122 123 The limitations of this study can be set forth. The first of these was the short time spent in the Coco Basin, a period of two months hardly being sufficient for a medical survey. The second was that no specific exhaustive anthropological method was used to study the social behavior of the Indians. But this second limitation is of no great consequence since the procedures ordinarily employed have not as yet attained quantitative values. But time should have been taken to gain a further insight into the views which these Indians held with respect to medical care. So far the authors' meagre observations form the only data from which to infer conclusions; certain "single methods" were employed and it is not too sanguine to state that still more important factors in the life, as it affects Public Health of these Indians are yet to be ascertained. Without, however, anticipating future inquiries, there is presented herewith those factors, medical and social, which the investigator deemed as sufficient in quantity to allow a recommendation for the health program of the Miskito without disrupting the social values of these people.

[p.3] [p.2 has no text material]

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114 Vague mention was made of the Atlantic seaboard Indians by Gon-
175 zalo Fernández de Oviedo (1478-1557) who was residing temporarily on the Pacific Coast of Nicaragua. A better account was given by the Franciscan missionary Espino[2] who had lived on the eastern coast during the year 1667-1668 (Río Patuca). It was during this period that the English entered into friendly and commercial relations with Indians; British traders arrived with increasing frequency and eventually garrisons were established. During this period there was also considerable trade with English buccaneers. The author of the first scholarly work on buccaneers, A. O. Exquemelin (English: Esquemeling; French: Oexmelin), came to the West Indies in 1666 and visited the Mosquito Coast of eastern Nicaragua in 1671. He had joined the buccaneers and had apparently assumed the function of barber-surgeon. It was, at any rate, in this capacity that he accompanied Morgan on his famous raid on Panama in 1671.[3] Exquemelin's original work in Dutch (Amsterdam, 1678), later translated into German (1679), Spanish (1681), English (1684), and French (1686), not only forms the basis for all of the popular accounts of the Seventeenth Century buccaneer captains but yields important descriptive information of the places he visited, especially the Mosquito Coast. Following Exquemelin, numerous other early historiographers have made accounts of the territory (vide: Dampier[4] Raveneau de Lussan[5] Sloane[6]).

175 In 1786 by virtue of a treaty with Spain, Great Britain agreed to yield the territory and to recognize the sovereignty of the King of Spain over it.[7] Somehow the Spaniards were unable to maintain a foothold in this area, a situation presumably due to the persuasive power of the English over the Indians in encouraging hostility towards the new government. In 1821 the States of Central America declared their inde-

[2] Espino, Fray Fernando. Relación Verdadera de la reducción de los Indios infieles de la provincia de Taguisgalpa, llamados Xicaques, cuyos operarios han salido, y salen desta provincia del SS. Nombre de Jesús de Goatemala, desde 1612, hasta el presente año de 1674, Guatemala, 1674.

[3] Exquemelin, A. O. De Americaensche Zee-Rovers, Amsterdam, 1678; Americanische Seeraüber, Nurnberg, 1679; Piratas de la América, Koln, 1682; Buccaniers of America, London, 1893; Histoire des Aventuriers qui se sont signalez dans les Indes, 2 vols., Paris, 1686.

[4] Dampier, William. A New Voyage Round the World. Fourth edition, 2 vols., London, 1699.

[5] Raveneau de Lussan. Journal du Voyage fait à la Mer du Sud. par les Filibustiers de l'Amerique en 1684 & années suivantes. Paris, 1689.

[6] Sloane, Sir Hans. A voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica, etc. 2 vols. London, 1707-1725; A New History of Jamaica from the earliest accounts, etc. Second edition, London, 1740.

[7] Stout, Peter F. Nicaragua: Past, Present and Future. Philadelphia, 1859.

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pendence from Spain and the English authorities from Jamaica renewed their friendly relations with the Indians. In fact, one of the chiefs from the area was crowned with solemnity by the British at Belize, British Honduras, and made king, thus reestablishing a British protectorate system. The "Mosquito" (Miskito) Kingdom in those days included the whole Atlantic Coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, a coastline of 700 miles.[7] However, in 1847 the territory became restricted to the territory between Cabo Honduras and Río San Juan, the jurisdiction of which was under British colonials. During these years under British supervision Orland W. Roberts,[8] an active trader on the eastern coast of Nicaragua, gave an accurate account of Miskito Indian customs. Reports were also given by Young,[9] Fröebel,[10] the most important being the text by Bell,[11] who lived in the territory from 1846 to 1862. From 1863 to 1868 John Collinson, a civil engineer, made two voyages to this coast and left an account of his travels.[12] H. A. Wickham,[13] (1867-1868) made a collection of birds from Río Escondido and Pearl Lagoon; P. Levy made researches for the Nicaraguan government[14] and other studies were made by the Swedish zoologist Bovallius,[15] and by K. Von Girsewald, [16] B. Mierisch,[17] and K. Sapper, who obtained a series of ethnographical specimens for the Stuttgart Museum.[18]

Inasmuch as there is a considerable admixture of Negro with the Miskito Indians it may be well to examine the possible reason for this

[8] Roberts, Orlando W. Narrative of Voyages and Excursions on the East Coast and in the Interior of Central America. Edinburgh, 1827.

[9] Young, Thomas. Narrative of a Residence on the Mosquito Shore, During the Years 1839, 1840 and 1841. London, 1895.

[10] Fröebel, Julius. Aus Amerika. Erfahrungen, Reisen und Studien. 2 vols. Leipzig, 1857-1858.

[11] Bell, Charles Napier. Remarks on the Mosquito Territory; its Climate, People, Productions, etc. Journal of the Royal Geographical Society, 1862, 32, 242-268. London.

[12] Collinson, John. The Indians of the Mosquito Territory. Memoirs of the Anthropological Society of London. 1870, 3, 148-156. London.

[13] Wickham, H. A. Notes of a Journey among the Woolwa and Moskito Indians. Proceedings of the Royal Geographical Society. 1869, 13, 58-63. London.

[14] Levy, Paul. Notes geografiques y económicas sobre la República de Nicaragua. Paris, 1873.

[15] Bovallius, Carl. Resor i Central-Amerika (1881-1883) Upsala, 1887.

[16] Girsewald, K. Von. Sechs Monate in Nicaragua. Braunschweig, 1896.

[17] Mierisch, B. Eine Reise nach den Goldgebieten in Osten von Nicaragua. Petermanns Mitteilungen. 1898, 88, 25-30. Gotha.

[18] Sapper, K. Reise auf dem Rio Coco (Nordliches Nicaragua). Globus, 1899, 76, 269-272, 271-276, Braunschweig; Proceedings of the Nineteenth International Congress of Americanists, 1917, 206-210.

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In recent times important contributions with regard to the Miskito Indians have been made by H. J. Spinden,[25] A. H. Schultz,[26] D. E. Harrower[27] and the exhaustive investigations of E. Conzemius.[28]

THE TROPICAL SITUATION

The status of peoples living in the tropics and semi-tropical regions varies considerably, depending on environment and man's adaptation to his habitat.[29]. Different foods are produced under different conditions. Thus, in the inner jungles and in certain highlands, very little food may be available; along the rivers it may be plentiful, and along the seashore other food sources may manifest themselves. Climate, geography, and socio-economic factors have a direct bearing on food availability and consumption.[30] Food habits naturally follow a similar pattern: the classical tortilla of Mexico and the Middle American countries; the use of manioc in the Amazon area; the dehydrated potato (chuño) of the Andean altiplano, the all too starchy diet which has developed in the Caribbean areas, all have their explanation in the factors typical of each area. Furthermore, when natives come into contact with other cultures, deculturation processes in the dietary pattern often take place.[31] These deculturation processes are not limited to clashes between Indian and white cultures, such as prevail in most of Latin America, but to the adaptation and absorption of dissimilar cultures not of Indian origin, such as in Puerto Rico and the southwestern States of this country, where the Hispanic and the Anglo-Saxon mode of life meet. Procurement of food in industrial areas by low income groups may modify the diet considerably. With this in mind no gene-

[25] Spinden, H. J. The Chorotegan Culture area. XXI° Congrès International des Americanistes (529-545) Goteborg, 1925.

[26] Schultz, A. H. Anthropological Studies on Nicaraguan Indians. Amer. Jour. Physical Anthropology, 1926, 9, 65-80.

[27] Harrower, D. E. Rama, Mosquito and Sumu, of Nicaragua. Museum of American Indian, Heye Foundation. 1925, 2, 44-48.

[28] Conzemius, E. (see footnotes Nos. 1 and 23), also: Die Rama Indianer von Nicaragua. Zeitschrift für Ethnologie, 1921, 53, 291-362 (Berlin); Apuntes sobre algunos Nombres Geográficos Mosquitos en Costa Rica y Panamá. Revista de Costa Rica, 1922, 309-326; Les Iles Corn de Nicaragua. La Geographie, 1929, 52, 346-362 (Paris).

[29] Pijoán, M. Certain Factors involved in the Struggle Against Malnutrition and disease. Univ. of New Mexico Press, 1943. Inter-Americana Monographs.

[30] Eggan, F., and Pijoán, M. Some Problems in the Study of Food and Nutrition. América Indígena. 1943, 3, 9-22.

[31] Pijoán, M., and Elkin, C. A. Secondary Anemia due to Prolonged and Exclusive Milk Feeding Among Shoshone Indian Infants. Jour. Nutrition, 1944, 27, 67-75.

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146 164 tation have chronic diarrhoea, some have glossitis,[65] occasionally leucopenia and lymphocytosis is observed. Reticulocyte counts usually were under 3 per cent and studies on platelets show them to be within normal limits. These findings indicate some unusual process in Necator hypochromic anemia.

Our own assays of the worms themselves reveal an iron content of only 1-2 mg. Fe per kilogram. It seems unlikely therefore that iron consumption by the worm plays a rôle in the anemia.

WORM INFESTATIONS

164 114 Because the writer is not a helminthologist the classification of intestinal parasites is not a complete one and depended considerably on the aid given him by laboratory assistants. However, certain aspects of the subject are intriguing. Sandground[66] has pointed out that the data dealing with intestinal parasites can be collated in such a way as to throw light on the racial origins of some of the Indians and to bear witness to the invasion of Central American countries by alien races. Von Thering according to Sandground had demonstrated the value of testimony from the world of parasitism as an aid to zoogeography and paleozoology. For instance, in recognizing the close affinities between the tapeworms harbored by marsupials in South America and Australia, Zschokke[67] presented evidence of a phylogenetic relationship in their hosts. Metcalf[68] also demonstrated by studies on opalinid ciliates in Amphibia a genetic relationship between frogs of South America and Australia and brought out new facts which tended to corroborate hypotheses in geography dealing with land masses connecting now isolated continents. Using information on the history of certain infectious diseases, and their prevalence in certain races, Williams[69] used the host-parasite association as a means of studying racial relationships among American Indians.

[65] Ashford, B. K., King, W. W., and Gutiérrez, P. Report of the study and treatment of "anemia" in Porto Rico. Bur. Print. and Supplies, San Juan, 1904.

[66] Sandground, J. H. Consideration of relation of host specificity of helminths and other metazoan parasites to phenomena of age resistance and acquired immunity. Parasitology, 1929, *21*, 227-255.

[67] Zschokke, F. Die Darmcestoden der Amerikanischen Beuteltiere. Centralbl. f. Bakteriol. 1904, *36*, 51-62.

[68] Metcalf, M. M. Bull. 129, U. S. Nat. Mus. 1923: Smithsonian Misc. Coll. 1929, *81*, No. 18.

[69] Williams, H. U. The epidemic of the Indian of New England, with remarks on Native American Infections. Johns Hopkins Hosp. Bull. 1909, *20*, 340-349; 1616-1620.

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Combined results of the malarial survey at Saulpaca (Zapaca) and San Carlos 164

Age	Total N° of Persons	Spleen examination Positive Splenomegaly		Positive Blood smear for parasites	
Years		Saulpaca	San Carlos	Saulpaca	San Carlos
0-1	40	0	11	6	10
2-4	46	2	15	13	17
5-9	128	3	52	46	55
10-14	80	2	34	27	36
15-19	41	2	18	14	20
50-54	34	0	8	8	9

the proximity of Bilwas Karma where certain public health measures have been introduced to expect a decreased incidence of disease. However the problem of clinical malaria remains a challenge and suppressive measures with atabrine or similar drugs may do much for these communities; the use of effective insect control with modern insecticides may play a major role in the future village control of insect borne disease. From the values given in the examination for malaria it is obvious that the disease constitutes the mayor health problem of the area. At Waspam, Bilwas Karma, the following mosquitoes were collected by [134] our party, these were: *Anopheles albimanus, A. albitarsis, A. aquasalis, A. argyritaris, A. parapunctipennis, A. pseudopunctipennis,* (several varieties), *A. vestitipennis, and A. crucians* (reported to be collected by Kumm). *A. albimanus* was found in great numbers and is probably the principal transmitter of malaria. This species is found in humid tropical climates and its breeding places are in the swamps exposed to the sun. However it has been known to exist at altitudes of 1350 meters (Guatemala City) and is the most common vector.

Syphilis

Hrdlicka[69] has pointed out that there is no substantial evidence [64] of precolumbian syphilis. On the other hand Williams and Wakefield, [114] Dellinger and Camp[69] regard the conclusions of their studies as being [71] sufficient to substantiate the view that syphilis was endemic in North America prior to European contacts. Regardless of controversy, sy-

[69] Hrdlicka, A. Disease, medicine and surgery among American aborigines (Geo. M. Kober Lecture). Jour. Amer. Med. Assoc. 1932, 99, 1661.

[69] Wakefield, E. G. Dellinger, S. C. and Camp, J. D., Study of osseous remains of "mound builders" of eastern Arkansas. Amer. Jour. Med. Sciences, 1937, 193, 448.

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164 philis, today among Indians, is a disease that deserves further study.
114 Dr. Mitchell Frank[91] has repeatedly stated that many cases with positive serologic evidence do not show clinical manifestations of syphilis nor is there anything which could be construed to indicate syphilis in the history. He points out furthermore that some of these cases on treatment have changes in serological findings but others do not. He has endeavored to perform all of precipitation — flocculation was well as the modifications of the Wasserman reactions and he is not satisfied with the status of this subject among Indians. Lynwalter[92] in 1923, in a study of Pueblo Indians found that 31 per cent had serologic evidence of syphilis and Dr. Frank does not believe that all these subjects were endowed with the disease. Plant[93] in South Dakota found serologic positives in Indians in 10.9 per cent of the men and 7.3 per cent of the women; Clarke[94] in New Mexico showed a serologic case rate of 1.5 for Indian males and 2.3 for Indian females. Dunham, Aberle, Farquhar and D'Amico[95] stated that positive serologic evidence was present in 2 per cent of the Indian children; Mountin and Townsend[96] report on incidence of 6.6 per cent among Indians studies. Pierce[97] has stated that there is something peculiar to the results obtained with precipitation flocculation tests among Indians and that the Wasserman reaction may be involved as well. Other considerations are the changing nature of the disease itself as exists over a period of years within a community and the effects of interracial marriages.

With regard to syphilis in Central Nicaragua, Rosenfeld[90] in his report stated "syphilis too is apparently very prevalent, several cases suggesting congenital and central nervous infections having been observed". It was, however, our impression that syphilis when present existed only in certain communities and rarely in others. Although there was no opportunity to perform routine serological testing, the clinical evidence of the disease was rare in all of the small

[91] Frank, Mitchell, Senior Physician, United Pueblos Agency, 1943, personal communication.

[92] From the Office of Indian Affairs, Washington, D. C. 1923.

[93] Plant, F. Paralysestudien bei Negern u. Indianern. 1926, Berlin.

[94] Clarke, W. Sangre impura in Mora: study of syphilis and certain other diseases in population of Mora County, New Mexico. Ann. of Int. Med. 1934, 7, 1936.

[95] Dunham, E. C., Aberle, S. D., Farquhar, L. and D'Amico, M. Physical status of 219 Pueblo Indian children. Amer. Jour. Dis. Children, 1937, *53*, 739-49.

[96] Mountin, J. W., and Townsend, J. G. Treas. Dept. Pub. Health Service Bull. 1936, Bull. 223 (Feb).

[97] Pierce, L. F. Personal communication, 1943.

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villages on the Coco River. In and around Waspam, San Carlos, and Bilwas Karma several cases were seen which appeared to have the stigmata of the disease. Dr. Daniel F. Molloy of the Rockefeller Foundation once informed Dr. George Shattuck [82] that yaws in Honduras and in Nicaragua occurred in "nests". It was our impression that the same can be said for syphilis. Several cases were seen in and about Bilwas that were being treated and although the disease does not present itself as a major Public Health problem within the Coco Basin it is important that it be treated since there is every likelihood that it will spread.

164 114 171

Yaws

Yaws is a common disease in the tropic regions of Central America and it is often seen in the subjects of the Coco Basin. There appears to be some evidence that Yaws was an ancient disease in the Americas. Hirsch [72] and Shattuck [82] agree that yaws was an importation from Africa. In a survey of a hundred patients at San Carlos nine of them yaws, three of the subjects were boys between the ages of 10 and 18 who had the typical secondary eruption of yaws. The other six patients had a mixture of annular tertiary lesions and chronic eruptions. Treponema was demonstrated in four of the patients. Although no formal survey was undertaken, Dr. Thaeler and others[99] had the impression that the disease was common in the area. The treatment of the subjects with mapharsen and bismuth salicylate results in a dramatic response, and at the end of the third weekly injection most of the lesions had disappeared. It would appear to us that a definite program could be established with regard to the treatment of yaws wherein a sustained effort in a field project coud accomplish the treatment of the majority of the cases within a short period of time. Thus a team could enter into a territory and make a definite tour with a view of treating yaws. Although the disease would probably not be eliminated by such a measure it would no doubt be suppressed in its spread to a where it might considered a minor public health problem.

164 [767]

Pinta

The disease pinta is characterized by changes in pigmentation as a result of *Treponema Carateum* infection. Is is presumed to be of

[99] Rosenfeld, L. in his survey of March, 1943 found among 200 subjects at Raiti and San Carlos, 26 of them with yaws and 18 of them with Pinta and 2 with both diseases combined.

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SMITHSONIAN INSTITUTION
BUREAU OF AMERICAN ETHNOLOGY
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ETHNOGRAPHICAL SURVEY OF THE MISKITO AND SUMU INDIANS OF HONDURAS AND NICARAGUA

By EDUARD CONZEMIUS

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LETTER OF TRANSMITTAL

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
Washington, D. C., June 2, 1931.

SIR: I have the honor to transmit herewith a manuscript entitled "Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicaragua," by Eduard Conzemius, and to recommend that it be published as a bulletin of the Bureau of American Ethnology.

Very respectfully yours,

M. W. STIRLING,
Chief.

DR. C. G. ABBOT,
Secretary of the Smithsonian Institution.

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ETHNOGRAPHICAL SURVEY OF THE MISKITO AND SUMU INDIANS OF HONDURAS AND NICARAGUA

By Eduard Conzemius

INTRODUCTION

131 The Miskito and Sumu inhabit the Atlantic side of Honduras and Nicaragua, from Rio Tinto or Black River (lat. 15° 50′ N.) to Rio Punta Gorda (lat. 11° 30′ N.). While the Miskito are found chiefly along the coast the Sumu are an inland tribe and extend westward within a short distance from the settlements of the Spanish-speaking population.

Together these two tribes occupy the larger part of the vast region generally known by the name of Mosquito Coast. This territory reaches from Cabo Honduras, near Trujillo, to Rio San Juan, at the Costa Rica boundary; that is, from the eleventh to the sixteenth degree north, an extension of about 550 miles by sea. From Cabo Honduras the coast runs at first in an easterly direction, then southeast as far as Cabo Gracias a Dios, whence it extends nearly due south.

103 Columbus, who discovered the country in 1502, gave the name *Costa de Orejas* "Coast of the Ears" to that part situated to the west of Cabo Gracias a Dios. The southern district of the Mosquito Coast became known in those days as *Cariay* or *Cariari*, *Veragua* or *Beragua*, *Castilla del Oro* "Golden Castile." These names were superseded by the Spanish-Mexican terms *Taguzgalpa* and *Tologalpa*, which stuck practically throughout the colonial period.

The name "Mosquito Coast" (Mosquito Territory or Mosquito Shore), employed by the English, has been taken from that of the principal Indian tribe, the Miskito, erroneously called Mosquito; the Spaniards translated it into *Mosquitia* and *Costa de Mosquitos* (*Costa Mosquita*). Many believe that this name has arisen from the numerous mosquitoes to be found in the country, while others think that the small islands off the coast, "which lie as thick as mosquitoes," may have caused the appellation.

133 Orography.—The shore of the Mosquito Coast is partly alluvial and partly coralline; to the south of Cabo Gracias a Dios the land is gaining on the sea, but to the north of that cape the reverse appears to be the case.

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133 In front of the coast, especially from Caratasca Lagoon to Monkey Point, or Punta Mico, are scattered numerous small islands, cays, coral reefs, shoals, and sand banks, which render navigation rather difficult.

The land rises gradually from the sea. The transverse ranges, radiating from the principal chain in the interior, form a series of terraces which gradually lessen in elevation until they disappear in the low coastal region. Low hills are met with at about 100 to 150 miles inland. Small isolated hills exist at different points within a short distance from the shore, and at Punta Mico and westward of Iriona spurs of the great central chain extend to the sea.

There are no active volcanoes. Earthquakes are not of frequent occurrence and they never do any damage; the heavy thunder occasionally conveys the impression that the earth is shaking.

133. 487 HYDROGRAPHY.—The whole of this area is well watered by numerous streams running nearly parallel to each other; they flow into the Caribbean Sea, or rather into a chain of so-called lagoons or brackish water seas, of which the largest one is that of Caratasca. These water sheets are situated parallel with the coast and are separated from the sea, as well as from each other, by low, narrow, sandy necks of land, called locally "haulovers," from the custom of dragging the canoes over them. Thanks to this inland water system, canoes may proceed in smooth water, except for short intervals, from Iriona to Bluefields, thus avoiding the dangerous and unpleasant sea voyage during rough weather.

The rivers are in many parts the only means of communication. In the lower part of their course they are navigable for small sailing vessels, flat-bottomed steamboats, and motor boats. Beyond the region of the falls and rapids only small canoes and pitpans may continue, and they with great difficulty. The largest rivers of the Mosquito Coast are the following: Aguan, Tinto, Patuca, Coco (or Wanks), Grande (or Great), Escondido (or Bluefields), and San Juan.

During flood times these streams rise tremendously, occasionally as much as 40 feet during a single night. The crumbling banks bring down trees which, sweeping down the rapid current, render navigation dangerous. At places where the banks are low the neighboring country is inundated. These floods disappear as rapidly as they come. Owing to the great variations in level to which these rivers are subject, traffic is stopped or impeded occasionally; during the rainy season on account of the great impetuosity of the water and during the dry season from inadequate draft. In this respect Rio San Juan is an exception, the steadiness of its flow being maintained by the two great lakes of Nicaragua which act like a reservoir, and of which it is the only outlet.

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The sediment, trees, logs, and the like, brought down by the rivers are deposited at their mouth at the sea, thus forming dangerous sand banks with only a few feet of water, which can be crossed in safety only by vessels of little draft. These openings into the sea, or bars, as they are called, are much safer when the streams flow first into a lagoon, instead of directly into the sea, for in that case the sediment is deposited in the lagoon.

CLIMATE.—The climate of the country is tropical, but it is greatly modified by the configuration of the soil and the prevailing winds. The nights are always cool. The average temperature is about 80° F. (26° C.); the thermometer rarely registers higher than 90° F. (32° C.) or falls below 65° F. (17° C.). January is the coldest month of the year.

The country is not as unhealthy as is generally supposed. The old English authors considered it fairly good, and there is no justification for the bad reputation it has now, not only among Europeans and North Americans but also among the Central Americans inhabiting the highlands of the interior or the Pacific slope. Numerous foreigners have lived in the country many years and have retained their health. Unless one is particularly susceptible to malaria or other tropical diseases, no bad effects are liable to attend a prolonged sojourn in the country, provided proper care is taken.

The cool sea breeze, which blows almost constantly around the lagoons, renders the air fresh and agreeable. During eight months of the year the east trades blow nearly uninterruptedly and greatly modify the effects of the heat, so that the latter is never suffocating. The great difference from our own climate does not consist so much in the higher temperature recorded as in the absence of really cold weather, which contributes so much to the vigor and "pep" of northern people.

From November to February northers may appear on the Nicaraguan coast, but they are not so dangerous to navigation as on the shore of Honduras. During a wet norther the weather is disagreeably cold, but a dry norther is pleasant and invigorating. From the middle of June to the middle of August the Nicaraguan coast is subject to squalls and sudden gusts of wind from the southeast and the south, which are a great danger to seagoing canoes. Revolving storms, commonly called hurricanes, occur occasionally on the coast, but they are never so violent and destructive as in the West Indies or around the Gulf of Mexico.

RAINFALL.—One may practically speak of two dry and two wet seasons on the Mosquito Coast. But these seasons are not well defined; the change from the rainy to the dry period, or vice versa, is not as marked as in the interior of Central America or on the Pacific

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coast. The rainfall is enormous, especially at San Juan del Norte or Greytown. According to the records of the Nicaragua Canal Co. over 296 inches fell at the latter place in 1890, which makes it perhaps the wettest area in America.

The northeast trade winds, which prevail on the Mosquito Coast, become saturated with moisture as they pass over the Caribbean Sea, which is precipitated as they meet the ranges of hills in the interior. Rarely does it rain, however, the whole day long; heavy showers, accompanied by violent winds, pour down enormous quantities of rain, after which the sun makes its appearance again. During the rainy season entire days may pass without a single drop of rain, while, on the other hand, light showers are frequent during the so-called dry season.

Roughly speaking, north of Rio Patuca the *verano* "summer," or dry season, lasts from the middle of February to the middle of May, and again from the beginning of August to the end of September. The remainder of the year is known as *invierno* "winter," or rainy season. The wettest and most disagreeable month of the year is October. The heavy rains pouring down during this month are known as *chubascos* among the Ladinos; they correspond to the *temporales* of the interior and to the *tapayagües* of the immediate Pacific coast.

South of Rio Patuca the rainy season lasts from May to January, with occasional spells of fair weather in September and sometimes also in October. The heaviest rains occur in June and July and are accompanied by thunder and lightning. These thunderstorms disappear as quickly as they come and give way to bright sunshine. April is the driest month of the year, but it is never free from numerous light showers.

VEGETABLE KINGDOM.—The difference in the rainfall between the two coasts of Central America is manifested in the contrasting aspect of the forests. Under the stimulating influence of the moist climate, which reigns practically throughout the year, the Mosquito Coast maintains an exuberant growth of vegetation and the forests never lose their brilliant evergreen foliage. On the Pacific slope, however, where long periods of drought check vegetative vigor, the forests present during the dry season an autumnal appearance, relieved by green stripes along the rivers. In the latter region may be observed the curious habit, possessed by several unrelated species, of producing flowers and fruits while the tree is entirely leafless.

Immediately along the seashore the soil is sandy and there is little vegetation, but it is partly fitted for pastures owing to the annual overflow of the rivers. Beyond this coastal region extends a strip of swampy land, about 15 to 20 miles wide, which is largely unfit for cultivation and is covered with a dense and impenetrable thicket of

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mangroves, reeds, and coarse grasses. Then follows the real tropical forest with very fertile soil, consisting on the surface of vegetable humus. In order to penetrate the forest the hunter has to cut his way through the tangled mass of vines and epiphytes with the aid of his machete. 137

North of Rio Patuca the fertile areas are characterized by the existence of extensive "cohune ridges," that is, places dotted with the cohune or coroso palm (*Attalea* sp.). A great number of other palms are found in this region, but only two of them are cultivated and play an important part in the food supply, the coco palm and the pejivalle. Among the other tree forms characteristic of the forest may be mentioned the following: Ceiba (*Ceiba pentandra* Gaertn.), mahogany (*Swietenia macrophylla* King), Spanish or West Indian cedar (*Cedrela* sp.), rosewood, rubber tree (*Castilla* sp.), sapodilla (*Sapota sapotilla*), lignum vitæ or guayacán (*Tecoma* sp.), Santa Maria or calaba (*Calophyllum brasiliense* var.), and balsa or corkwood (*Ochroma lagopus*). Epiphytic orchids are especially numerous and rare varieties are also found. The strong withes or *bejucos* on the trees are used in basketry and as a tying material. [285]

From Rio Tinto to Rio Grande the dense forest is at times interrupted by large areas of pine ridges or savannas. These are undulating plains covered with gravel or coarse sand, overgrown with grass, myrtaceæ, oaks, nances, small fan palms and long leaf or pitch pines. This pine (*Pinus tenuifolia* Benth.) has its southern limit on the Atlantic side of Nicaragua, a little north of Bluefields Bluff, in latitude 12° 5′ north. Few big trees are to be found in these savannas; there is little underbrush, epiphytes and lianas are scarce, and the whole presents a parklike appearance. On the rich alluvial soil on both sides of the streams traversing the savannas grows a dense and luxuriant vegetation resembling the real forest.

ANIMAL KINGDOM.—Zoologically the Mosquito Coast belongs to South America rather than to North America. In this sparsely inhabited region may be found a great number of species of animal life. The largest mammals are the tapir and the manatee; the latter is still an important animal of food for the Indians, but it is getting rare now. 136

In the jungle are found such beasts of prey as the jaguar, the puma or cougar, and the ocelot; a black variety of the jaguar is occasionally met with. The howling monkey, the spider monkey, and the white-faced or capuchin monkey are found on the tree tops; the two last-named ones are, together with two species of deer and two species of peccary, the most important food animals of the Indians. [224]

Three species of anteaters, many armadillos and opossums, and 2-toed and 3-toed sloths may be met with. Among the rodents may be mentioned the agouti, paca, several species of porcupine, squirrels,

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and rabbits. The raccoon, the coati or pisote, the weasel, the skunk, and the kinkajou are met with in the forests and the otter exists in all the streams.

Alligators and a small species of crocodile infest the rivers, lagoons, and swamps. Several varieties of river turtles or tortoises occur, while the valued hawk's bill, the green turtle, and the loggerhead are caught in the sea. The largest lizards are the iguanas, which occur in several eatable varieties. Poisonous and harmless snakes are numerous.

Man-eating sharks and sawfishes are found in the sea and in the lower course of the streams.

The "john crow" or turkey buzzard is a useful scavenger. During the winter months many of the common North American birds arrive as immigrants and spend the cold season in this mild climate. Guans, curassows, mountain hens, wild ducks, and pigeons are esteemed as food. Trogons, orioles, toucans, tanagers, macaws, parrots, parrakeets, and humming birds make themselves conspicuous by their plumage or by their song. Flamingos, white egrets, and herons are found chiefly around the lagoons and swamps.

The mosquitoes are the propagators of malaria, while red bugs, ticks, cockroaches, jiggers, sandflies, and screw worms are largely responsible for the prevailing skin troubles.

INHABITANTS.—The humid tropical climate, combined with the jungle vegetation, have retarded settlement and the building up of a dense population. The bulk of the inhabitants of the Mosquito Coast are found along the seashore and on the lower part of the larger rivers.

Besides the *Miskito* and *Sumu*, with whom the present monograph will deal, two other Indian tribes inhabit the Mosquito Coast, the *Paya* and *Rama*. The former live in Honduras between Rio Patuca and Rio Sico. Their number is estimated at about 700 and they are dying out rapidly (vide Conzemius, b). The Rama tribe, the bulk of which lives on Rama Key in Bluefields Lagoon, numbers only about 200. Its language is of Chibcha stock and is closely allied to those spoken by the aborigines of Costa Rica, Panama, Colombia, and northern Ecuador (vide Conzemius, c). The western portion of the Mosquito Coast was formerly occupied by the *Matagalpa*, whose language has been extinct for nearly half a century; a dialect of it is still spoken to this day in the villages of Cacaopera and Lislique (Salvador). A number of other tribes have been reported from the country under consideration in former days, but as they have been extinct for some time it has been impossible to classify them. Some of the tribal designations applied by the early authors are merely derived from the rivers upon which the tribes lived.

From Rio Tinto northward along the sea and lagoons live the so-called *Black Carib* or *Garif*. These are the descendants of the

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unfortunate aborigines of St. Vincent, one of the Leeward Islands, whom the British Government deported in 1796 to Ruatan Island in the Bay of Honduras. They have also formed several small settlements at Pearl Lagoon (Nicaragua). The Garif are an offspring of the Carib Indians who inhabited the Lesser Antilles at the time of discovery, and already during the seventeenth century intermarried with runaway Negro slaves. They still speak the language of their ancestors from the West Indies and have retained many original Indian customs. They appear to be increasing in number and are estimated at about 15,000, of whom 3,500 live within the boundaries of the Mosquito Coast; the remainder are found all along the Atlantic shore of Central America as far north as Stann Creek in British Honduras.[1]

Around Bluefields, Pearl Lagoon, San Juan del Norte, and the islands Corn, San Andreas, and Providencia a large share of the inhabitants are so-called "*Creoles.*" These are the descendants of the Negroes and Mulattoes brought as slaves from Jamaica by the English settlers during the eighteenth century. They intermarried with Miskito and Rama Indians and speak the English language. The Creoles practically all belong to the Moravian Church; they are thrifty and law-abiding, very polite, and respectful to strangers, and less noisy and boisterous than the West Indian Negroes who have emigrated to the Mosquito Coast in recent years.

Negroes and *Mulattoes* are found scattered in the country. They are chiefly of English speech and have arrived lately from Jamaica, the Cayman Islands, the Bay Islands, and British Honduras. There may be found also a few "Patois," that is French-speaking Negroes from Haiti, Martinique, Guadeloupe, Santa Lucia, and Dominica, besides some Spanish-speaking Negroes from the interior of Central America or from the coasts of Colombia. The Negro is very strong and robust and endures with ease the moist climate of the coast, but morally he compares very unfavorably with the Creole. He is idle, servile, sensual, weak willed, and content with little; he will not resent bad treatment and injustices are soon forgotten. He loves luxury and extravagance and every species of vain, outer show attracts him.

When the Mosquito Coast was still a British protectorate, that is up to 1860, a very few *Ladinos*, or Spanish-speaking Central Americans, could be found there. Locally they are generally called "Spaniards," but they are largely of Indian extraction with only a very slight admixture of Spanish blood. They arrived chiefly as rubber bleeders and gold seekers, and lately as Government officials. Since the incorporation of the Mosquito Reservation into the Republic of Nicaragua (1894) their number has rapidly increased; they are particularly numerous at Bluefields and at the Pispis mining district, but may be found scattered throughout the country. The Ladinos

[1] Vide E. Conzemius, Ethnographical Notes on the Black Carib (Garif). American Anthropologist, April-June, 1928, vol. 30, pp. 183-205.

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000 are somewhat quarrelsome, especially when they are under the influence of intoxicating drinks, but they are very hospitable and polite to strangers.

The creation of the mining and banana-raising industry has brought to the country an ever-increasing number of *North Americans* and *Europeans*. *Chinese* and *Syrians* are active as shopkeepers.

175 HISTORY.—Columbus discovered the country in 1502, during his fourth and last voyage to the New World, when he proceeded along the Atlantic coast of Central America from Trujillo in Honduras to Nombre de Dios in Panama. In the course of the following years several attempts were made by the Spaniards to take possession of the Mosquito Coast, but the natives resisted and were able to maintain their independence. The Spaniards were chiefly in quest of loot, and as the Indians gave them much trouble, and no gold was found in their country, they centered their energies upon the Pacific coast.

Later the English from Jamaica entered into friendly and commercial relations with the Miskito Indians, and gradually established a protectorate over the country. British traders arrived frequently on the coast, and later garrisons were introduced from Jamaica.

In 1786, by virtue of a treaty celebrated with Spain, Great Britain agreed to evacuate the country, and to recognize the sovereignty of the King of Spain over it. But the Spaniards were unable to maintain a foothold there, owing to the hostilities of the Indians worked up by a number of the English settlers who had refused to leave the coast.

Spanish power in America was already on the decline in those days and in 1821 the States of Central America declared their independence. Gradually the English authorities from Jamaica renewed their old friendly relations with the Miskito. The son of one of the principal chiefs was crowned solemnly at Belize (British Honduras) and the protectorate was reestablished.

The Mosquito Kingdom or Kingdom of Mosquitia was claimed in those days by the English to include the whole Atlantic coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, that is a coast line of about 700 miles. The western limit was not well defined, but was said to be formed by the first Spanish settlements in the interior. The Corn Islands and the numerous smaller islands and keys, situated off the coast, were also under the jurisdiction of the Mosquito King. The larger islands, Providencia, Santa Catalina, and San Andreas, were administered, however, by the authorities of Nueva Granada (Colombia), although they belong geographically to the Mosquito Coast.

In 1847 the claims of the British were limited to the territory between Cabo Honduras and Rio San Juan, and over this region the King, or rather his British advisers, exercised jurisdiction until 1860. The boundaries between the Mosquito Coast and the Republics of

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Honduras and Nicaragua had never been fixed; the two last named never recognized the existence of a Mosquito nation, but their effective jurisdiction did not extend to the east of an irregular line reaching from the eighty-third to the eighty-sixth degree west of Greenwich.

In those days the project of an interoceanic canal through the Isthmus of Nicaragua was occupying the principal maritime nations of Europe and the United States as well. The latter country had never viewed with favor the continual encroachments of Great Britain upon Central America. But when the English in 1848 took forceful possession of San Juan del Norte, the Atlantic terminus of the projected canal, the North American Republic openly took sides with Honduras and Nicaragua. Pressure from the United States forced England to sign in 1859 and 1860 treaties with Honduras and Nicaragua, by virtue of which the Mosquito Coast was recognized as part of the two Central American republics.

The part of the country situated between Rio Hueso on the north and Rio Punta Gorda on the south and extending inland to 84° 15′ W., was, however, made into a reservation wherein the aborigines were to be allowed a certain autonomy. At the head of this reservation was the King, whose title was now changed to that of "Chief" (*Jefe*).

Most of the Indians, Miskito as well as Sumu, were not living within the boundaries of this newly created territory. The government of the latter was chiefly in the hands of native English-speaking "Creoles" or Jamaican immigrants. These were strongly opposed to Nicaraguan influence. The authorities of the reservation were constantly at odds with those of Managua, and the sovereignty of the Republic was only nominal. In 1881 some of the arising disputes were submitted for arbitration to the Emperor of Austria. Finally in 1894 Zelaya, President of Nicaragua, forcefully took possession of the Mosquito Reservation and ousted the local authorities; the country was then incorporated in the Republic as the *Departamento de Zelaya* (now *Departamento de Bluefields*).

SHORT ACCOUNT OF THE ETHNOGRAPHICAL EXPLORATION OF THE MOSQUITO COAST.—Columbus sailed along the Mosquito Coast from north to south in 1502, but he appears not to have come in contact with either Miskito or Sumu. Between the years 1513 and 1529 the versatile historiographer of the Indies, Gonzalo Fernández de Oviedo (1478–1557), spent some time on the Pacific coast of Nicaragua. His great work, which was not published completely until 1851–1855, deals, however, almost exclusively with the Nicarao and Chorotega as far as Nicaragua is concerned, and only a few vague statements refer to the "Chontales," a general designation under which the primitive tribes of the Atlantic coast were known in those days. Benzoni, Castañeda, Andagoya, García Palacios, and Motolinia all personally

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114 visited Nicaragua or Honduras, but the rude Atlantic tribes were entirely ignored by them, just as they were by the other celebrated chroniclers, Gómara, Herrera, and Torquemada.

A few ethnographical details pertaining to the Indians of Rio Patuca (Sumu or Paya) have been left by the Franciscan missionary Espino, who remained in that region from May, 1667, until the beginning of 1668.

The author of the first famous work on the buccaneers, A. O. Exquemelin (name corrupted by the English into Esquemeling and by the French into Oexmelin), who came as an engagé to the West Indies in 1666, visited the Mosquito Coast in 1671 or 1672. He had joined the buccaneers in those days and among them appears to have performed the functions of barber-surgeon. In this capacity he accompanied Morgan on his famous raid on Panama in 1671. From the latter place his vessel sailed northward along the Atlantic shore of Central America, stopping at Bluefields Lagoon where the buccaneers were attacked by Sumu Indians. The vessel then stopped for some time at Cabo Gracias. Exquemelin's work was published in Dutch in Amsterdam in 1678. It was translated in German (1679), Spanish (1681), English (1684), and French (1686). Numerous editions have appeared since in many languages, and the book forms the basis of practically all the popular accounts of the seventeenth century buccaneer captains. The translations have appeared with serious additions, omissions, and alterations, each translator having been endeavoring to present his own country in the most advantageous light. The French translations especially contain additions of other French buccaneers not mentioned in the Dutch original, while the English editions glorify particularly the sack of Panama by Morgan. Exquemelin's work gives some very interesting accounts regarding the Miskito of Cabo Gracias a Dios.

The famous English navigator, William Dampier, who was born in 1652 as the son of a Somersetshire farmer, sailed to the West Indies in his youth. From 1675 to 1678 he was active as logwood cutter in Campeche and in 1680 he joined the buccaneers. In later years Dampier became very celebrated. On board a buccaneer vessel he visited Bluefields Lagoon and the Corn Islands, which enabled him to give us a few ethnographical details regarding the aborigines (Sumu) of those parts and the Miskito of Cabo Gracias a Dios. Dampier's great work, A New Voyage Round the World, which appeared in London in 1697, had a tremendous success and within a few years a great number of editions appeared in English, French, German, Dutch, and other languages.

The Parisian buccaneer, Ravenau de Lussan, a well-educated nobleman, who joined the buccaneers at Santo Domingo in 1684, is the author of a book (Journal du Voyage, etc., Paris, 1689) on the exploits

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of the French and English adventurers in the Pacific Ocean from March, 1685, to December, 1687. Being pursued by superior Spanish forces, these buccaneers abandoned their vessel in the Gulf of Fonseca and walked to the upper course of Rio Coco, down which they descended in rafts to the Miskito settlements around Cabo Gracias a Dios.

The great naturalist, Sir Hans Sloane, has also left us a few details pertaining to the Miskito whom he had met in Jamaica. On the arrival of each new governor of that island the Miskito King came over to Jamaica with a number of his men, as he had a commission from the governor. Sloane had thus occasion to meet these Indians in 1688 and again in 1725.

But the most detailed account of the aborigines of the Mosquito Coast, written in early days, is that of an Englishman, probably a former buccaneer, who signs merely "M. W." (The Mosqueto Indian and His Golden River). He had an intimate knowledge of the Miskito and also gives some details pertaining to the Sumu.

Over 100 years passed until another careful observer has left us an account of the Indian tribes under consideration. Orlando W. Roberts was active as a trader on the eastern coast of Central America from the Gulf of Darien to the Bay of Honduras (1816–1823). He refers chiefly to the tribe of the Miskito.

During the years 1839 to 1842 Thomas Young was living around Rio Tinto. He was deputy superintendent of the British Central America Land Co., which was endeavoring to colonize that part of the Mosquito Coast. Young had an intimate knowledge of the various tribes of Indians as they really were in those days.

From June to August, 1844, a commission of three Germans (Messrs. Fellechner, Müller and Hesse) was looking over the coastal region of Honduras between Cabo Gracias a Dios and Rio Patuca in order to determine the advisability of establishing a German colony there.

Another German, Julius Fröbel, who was compelled to leave his native country as a result of the political events of 1848, spent some time in 1850 and 1851 around the great lake region of Nicaragua and on the upper Rio Escondido among the Ulwa Indians.

For much valuable information pertaining to the Miskito and Sumu we are indebted to three Englishmen who came to the country in the following years. The most important one among them is Charles Bell, who lived in the country during his youth, from 1846 to 1862, his father being attached to the government of the "Kingdom." He had a very intimate knowledge of that part of the country situated to the south of Rio Coco. Between 1863 and 1868 John Collinson, a civil engineer, made two voyages to the Mosquito Coast, being employed by Commander Pim to survey from Lake Nicaragua

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to Punta Gorda for a proposed railway. The naturalist H. A. Wickham lived in Nicaragua (Rio Escondido and Pearl Lagoon) from October, 1867, to June, 1868, in order to collect birds. His ethnographical notes pertaining to the Ulwa are of great interest.

A few years later the French mining engineer, Paul Lévy, traveled on the Mosquito Coast to carry on researches for the Government of Nicaragua. Among the minor contributors to the ethnology of the Mosquito Coast of the nineteenth century are the following: Bovallius, the Swedish zoologist (1881–1883); K. von Girsewald (1892), who spent six months in the gold regions of Pispis; Bruno Mierisch, the government engineer of Nicaragua, who explored the gold regions between Rio Coco and Rio Grande in 1892 and 1893.

In 1900 the celebrated German traveler, Dr. Karl Sapper, who is intimately acquainted with Central America, visited the Miskito and the Sumu living on and about Rio Bocay. The ethnographical specimens collected by him are in the Stuttgart Museum. A collection of ethnographical and archeological material obtained by Doctor Neuhaus around Rio Escondido about this same period is in the Museum für Völkerkunde (Berlin). The German linguist, Walter Lehmann, also investigated these tribes in the course of his voyage to Central America (1907–1909), but unfortunately the ethnographical part of his studies has not yet appeared. The Honduran schoolteacher, Francisco Martínez, also collected interesting ethnological data during his stay at the Sumu village Guampú on Rio Patuca (1916–17). Unfortunately his various contributions have all appeared in local newspapers and reviews of very difficult access.

Finally mention must also be made of the work done by several Moravian missionaries, especially Heath, Grossmann, Reichel, Martin, Ziock, and Siebörger. The books by Schneider and Brindeau are based nearly exclusively upon the investigations of these missionaries.

Since the war the work has been continued by Americans. H. J. Spinden visited Rio Coco and the coast of Nicaragua in 1917–18, and the coast of Honduras in 1923. Dr. A. H. Schultz, of the Johns Hopkins Medical School, carried on some anthropological studies on the Atlantic coast of Nicaragua, examining 25 Rama and 12 Sumu Indians. During the same year (1924) D. E. Harrower, of the Museum of the American Indian, Heye Foundation, was collecting ethnological specimens during two months among the Miskito, Sumu, and Rama.

GENERAL REMARKS ON THE MISKITO

The Miskito are estimated at about 15,000, which number exceeds that of all the other Indian tribes of the Mosquito Coast combined. They are largely mixed with Negroes, for which reason the Spaniards have called them "Zambos," meaning Negro and Indian half-breed, a name which is appropriate.

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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

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In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tāwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:
a, e, i, o, u, correspond to the sounds of these vowels in German or Spanish.
ai as ai in "aisle."
au as ow in "how."
oi as oi in "boil."
ŋ as ng in "sing."
x as Spanish j or German ch in "ach" or Scotch ch in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
All the other letters have approximately the same value as in English.

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the Ulwa inhabit the southern section of the territory in consideration, from Rio Grande to Rio Punta Gorda. 101 131

The Bawihka are limited to Rio Banbana, a large northern affluent of the lower Prinsapolca. The Miskito call them generally *Sumu-tirpi* "small Sumu" or by the misleading name *Twahka*, but among all the Sumu they are known as "Bawihka." This latter name is not mentioned by Lehmann, the latest investigator into the languages of Central America. The Bawihka were formerly also found on the Wawa and Kukallaya, but they were expelled from these regions by the Twahka, and then settled on Rio Banbana. Most of them are living at the village Wasakin (*was-sa-kiá*), "Rocks of the black water."

The Kukra formerly occupied the coast and shores of the lagoons from Rio Grande to the southern extremity of Bluefields Lagoon. They have always refused all intercourse with the Miskito and the foreigners, but occasionally communicated with the neighboring Ulwa for trading purposes. Toward the middle of the nineteenth century some rubber cutters ventured into their territory, and at Kukra Hill, northwest of Bluefields, they captured a few Indians who wore nothing but a loincloth of white tunu and a collar of shells and animal teeth. They were taken to Bluefields, but died soon afterwards. After this incursion into their country the remaining Indians went inland to the Rio Siquia, where they apparently became absorbed by their kindred, the Ulwa. At Pearl Lagoon may be met a few Miskito who are mixed with Kukra.

Other Sumu subtribes, which are already extinct now, are the *Yusku* (*Yosko*), *Prinsu*, *Boa*, *Silam*, and *Ku*. The Yusku lived on the rivers Tuma and Bocay; they are said to have been very bad and were exterminated by the other Sumu in the course of prolonged wars. The Prinsu lived on Rio Prinsapolca, which owes its name to them. They intermarried with the Miskito and the offspring became known as *Tuñla* or *Tongula* who formed a separate tribe speaking a corrupted Miskito but retained many Sumu customs. The Boa lived on the headwaters of Rio Grande, while the Silam and Ku lived along the Waspuk River.

The Spanish historians of the sixteenth century included the Sumu under the general term "Chontal" or "Chondal," a Mexican word which means merely "stranger," "foreigner," and was applied by the Nahuatl to any primitive tribe. In later documents the Sumu are mentioned as "Caribes," "Chatos," "Albatuinas" (from the Miskito *Albowina*) and by a number of other names. To-day the whole group is generally known by the Miskito designations "Sumu" or "Smu," which have already been used by Bell and Wickham. Some writers have mentioned the whole group under the names Twahka and Ulwa, which, properly speaking, should be 101

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restricted to two subtribes thereof. Lehmann's classification of the Sumu tribes is likewise unsatisfactory. With the word "Sumu" we have a convenient name for the whole of these various dialects; its use will avoid the sad confusion met with still in the recent literature.

All the male Sumu either know Miskito or Spanish (or even both), depending upon their proximity to Miskito or Ladino settlements. A few of them know a little English. Hardly any of the women are, however, able to speak a foreign tongue. Through Miskito many corrupted English words have passed into their speech, while words borrowed from Spanish are not so common.

RELATIONSHIP OF THE MISKITO AND SUMU

The relationship of the Miskito with the Sumu has already been established from linguistic evidence (Lehmann, b: 714–720) and is reenforced by a survey of the ethnology of the two tribes. In this connection the following Sumu tradition, which points toward a common origin, will be interesting. It was recorded in 1904 at *Alami-kañban* (Rio Prinsapolca) from a Sumu named Frederick, by the Rev. G. R. Heath, a Moravian missionary, who resided many years on the Mosquito Coast. The latter communicated it to Lehmann, who published it in 1910 (b: 717–718). This version was later reproduced by Joyce (9–10) and by Alexander (185–186):

At Kaunapa Hill, on the left bank of Rio Patuca, a few miles below the mouth of Rio Guampú, there is a rock bearing the sign of a human umbilical cord, and from which were born the tribal ancestors, a Great Father (*Mâi-sahana* "he who begot us")[3] and a Great Mother (*Itwana* or *Itoki*).[4] The Miskito and the Sumu are the descendants of these two primal ancestors.

The first born were the Miskito who, disobedient and headstrong, as they are still to-day, cared little for the instructions of their ancestors and ran away to the seacoast.

Then the Twahka or Tawahka were born, who consider themselves to this day the nobility among the Sumu.[5]

Then followed the Yusku, who turned to evil ways; for that reason the other tribes made war upon them and almost exterminated them.

The youngest, the Ulwa, being according to the Indian custom the favorites, profited to such an extent by the instructions of the tribal ancestors that they became especially skilled in the secrets of medicine and incantation and won the name of *Boa*, "enchanters."[6]

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[3] *Wan-bâikan* in the Miskito language.

[4] *Yapti-misri*, "Mother Scorpion," or *Yapti-tara*, "Great Mother," in the language of the Miskito.

[5] In Miskito the word *tawakya* means, however, "firstborn" and the parents thus call their first child.

[6] Lehmann (b: 717) says erroneously "Singers," and this error is copied by Joyce (10) and Alexander (185–186). According to my own informants the Boa were a subtribe of the Sumu differing from the Ulwa.

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Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[1]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (27). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Casiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[1] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

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On the other hand, Santaella Melgarejo, in a report dated Guatemala, April 3, 1715 (Peralta, b: 78–80), states that the vessel in question was English and that it was wrecked in 1652 on the Cajones or Tiburones Keys to the east of Cabo Gracias a Dios. Fearing the Indians from the mainland, the Negroes settled at first at some keys south of the mentioned Cajones (undoubtedly the Mosquito Keys), and once friendly relations were established with the natives, they established themselves at Cabo Gracias a Dios.

Again it is said that the vessel in question was Spanish and bound for Cuba (Raveneau de Lussan: 437–438; Heath, a: 51).

Our source material pertaining to the origin of these slaves is therefore very meager and contradictory. According to a report of Fray Benito Garret y Arlové, dated November 30, 1711 (Peralta, b: 57), one of these Africans, an old man named Juan Ramón, who lived in Granada (Nicaragua) related that about one-third of his countrymen were captured by the Indians and reduced to slavery. The others took to the bush, whence they carried on a crude warfare with the aborigines, who were finally compelled to retreat toward the interior. About 1672 the number of these African slaves held by the Miskito was estimated at about 200; in those days they had already adopted the language and customs of the Indians (Exquemelin, Fr. ed.: II, 276–277).

As a result of the above, the Miskito from Cabo Gracias a Dios to Sandy Bay had already a large admixture of African blood toward the end of the seventeenth century. In the course of time refugee slaves from the English settlements and more recent immigration of Negroes and Mulattoes (chiefly from the West Indies) have contributed to the spreading of the African type, so that to-day Negro characteristics may be observed in almost every village. One of the subtribes of the Miskito, the *Tāwira* who live a short distance inland, from Sandy Bay to Wawa River, however, have refused to mingle their blood with that of the Africans. It is only in recent years that they have begun to intermarry with the mixed Miskito, especially with newcomers from Rio Coco, so that soon a Miskito of pure Indian blood will be a thing of the past.

We do not know to what extent these African slaves have influenced the original language of the Miskito, for such researches would entail exhaustive comparative studies with the surrounding Indian languages (Sumu, Paya, Rama), with the Creole dialects of the West Indies, and the languages of the Guinea Coast. The vowel scale is exactly the same as in the Jamaican Creole dialect; several of the peculiar phrases of everyday life are found literally translated into English in Jamaica (Heath, a: 51).

We are also indebted to Mr. Heath for a Miskito migration legend which is said to have been given out as authentic by Eduardo Pereira,

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a descendant of the Miskito royal family.[8] (Heath, a: 49; Lehmann, b: 715–716; Joyce: 8–9.) The present writer has, however, little faith in its exactitude, and such is also the opinion of the various older Indians he consulted about it.[9]

In former days the Miskito were called Kiribi [10] and lived on the narrow isthmus between Lake Nicaragua and the Pacific Ocean, a territory which the Nicarao occupied at the arrival of the Spaniards.

Late in the tenth century this country was invaded by a tribe of immigrants from the north (probably the Nicarao) and eventually, after a long struggle, the Miskito were compelled to leave their old home and retreat to the eastern shore of Lake Nicaragua. Here they resided for nearly a century, but finally, again under foreign pressure, this time exercised probably by the Sumu or Matagalpa, they migrated to the Atlantic shore. Believing that they had now found a safe home, they gave themselves the name of *Dis-kitwras-nani*, "they who can not be dislodged," which was corrupted into Miskito.

At the time of their migration to the Atlantic their leader was a sort of culture hero, named *Wakna*, whose son *Lakpuiara* "Evening Star" conquered the whole coast from Honduras to Costa Rica. While Wakna was still alive disputes arose among the Miskito chiefs. A rebellion, headed by *Wielandin*,[11] was defeated; its leader was imprisoned, and 300 of his partisans were executed.

PHYSIQUE: PERSONAL CHARACTERISTICS

GENERAL.—The Sumu differ naturally in many points in physique from the Negro-mixed Miskito, but there are also certain slight dissimilarities between them and the pure Miskito or *Tāwira*. The latter are, as a rule, well built and of middle height, whereas the Sumu are rather thickset and low in stature. According to Schultz (67) the Sumu from Rio Prinsapolca measure from 1.427 m. to 1.68 m. with 1.5816 m. as an average.[12]

Both tribes are sturdy, heavy muscled, proportionally broad shouldered, and have deep chests. The arms are well developed in comparison to the legs. As both of these tribes are essentially canoe men, passing most of their time in a cramped position in small boats, they lack the well-developed leg muscles of the "civilized" Indians of the interior.

COLOR.—The Sumu are of fairer complexion than all the other Indian tribes of this part of Central America, not excluding the so-called pure Miskito or Tāwira.

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[8] The father of Mr. Pereira was a Mexican; his mother was the daughter of a Scotchman named Haly and an Indian woman of the Miskito royal family.

[9] Pereira, besides, denies having given out this version, and claims to be in possession of the correct account.

[10] This name has an alluring similarity to Corobici, under which name the early Spanish historians of Central America mention an Indian tribe which lived formerly in northwestern Costa Rica to the south of Lake Nicaragua.

[11] Compare waila "enemy" in the Miskito language.

[12] The anthropological measurements by Schultz, quoted in this study, were taken on 13 Sumu from Rio Prinsapolca and 25 Rama from Rama Key, all males.

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142 SACRAL PIGMENT SPOT.—The "Oriental mark" (Mongolen-Fleck) is met with among all these tribes during early infancy. It consists of a bluish-gray spot found in the sacral region, which gradually disappears in adult life. The Indians pay no attention to it and most of them do not even know of its existence.

141 CEPHALIC INDEX.—The Sumu are on the average hyperbrachycephalic, that is, they have exceedingly broad heads. The cephalic index, which is obtained by dividing the breadth of the head by its length and multiplying the result by 100, was found to be 89.48 according to Schultz (71–72). This high figure is surpassed by few American tribes.[13] It may be the result of artificial deformation, since this practice was formerly current among the Sumu.

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MORPHOLOGICAL FACE INDEX.—The Sumu are on the average mesoprosopic, that is, they have proportionally narrow faces; Schultz (72) found a face index of 84.82 among this tribe living on Rio Prinsapolca, while among the Rama the figure was higher (85.20).

NOSE.—The nose of both Miskito and Sumu is relatively large; the profile is slightly convex among most of pure-blooded Indians. The nasal index is, on the average, very low among the Sumu, the range of variation extending from 66.0 to 83.3, with 73.76 as an average (Schultz: 74). This tribe is therefore mesorrhinic; the Rama, however, have even a narrower nose and are classed as leptorrhinic, the index ranging from 57.6 to 75.9 with an average of 65.96, a rather unusually low figure for American Indians.

EARS.—The Indians of the Mosquito Coast have relatively narrow ears, the physiognomic ear index averaging 54.09 among the Sumu; those of the Rama are still narrower with an average ear index of only 52.64 (Schultz: 75).

142 EYES.—The large brilliant eyes are so dark brown that they appear black to the casual observer. In both Miskito and Sumu they are horizontal, but those of their northern neighbors, the Paya, have a slight Mongoloid tilt.

LIPS AND CHIN.—The lips are full, but not thick, among the Sumu and the pure-blooded Miskito, while the chin is generally "receding"; a prominent chin occurs rarely.

HANDS AND FEET.—The hands are small as compared with Whites and Negroes. In most individuals the annularis is slightly longer than the index finger; the reverse is apparently never the case. The little finger is relatively very small and stands inside of the direction of the ulnar edge of the palm, as if it had been crowded toward the fourth finger. The smallness and position of this finger is not an inherited racial character, but the direct result of the narrow paddle

[13] Boas, quoted by R. Martin (Lehrbuch der Anthropologie, Jena, 1914) found an average cephalic index in Wichita Indians (Oklahoma) of both sexes of 89.5 and one of 89.7 in male California Indians.

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handles.[14] These conditions are not yet apparent on the hands of children.

HAIR.—All these Indians have an abundance of hair growth extending very low over the forehead, but it is very scarce on the other parts of the body. The hair is usually black, and very straight and coarse, but occasionally hair with very long low waves may be met with among the pure Indians. Gray and white hair occurs sometimes but not by far as frequently as among the white race. Baldness is practically unknown. Beard growth is very scarce, while chest hair is totally absent among the pure Indians.

LONGEVITY.—There are no reliable figures to be obtained regarding the age of the older Indians. Very few of them seem to have passed their sixtieth or seventieth birthday; still during the years 1917–1922 the writer met a number of Indians who were about 4 to 6 years old at the great eruption of the volcano Coseguina on the Bay of Fonseca in 1835. This catastrophe, which was accompanied by great earthquakes, is still spoken of by these Indians as the "Great Darkness" (M.: *tikmya-tara*; S.: *puk-sani*, *puk-barak*);[15] a thick rain of ashes poured over the coast at the time and the sun was as invisible as at night.

DEFORMITIES.—In former days deformed children were not allowed to grow up; they were either buried alive or left to starve. This accounts for the rare cases of deformities encountered among these Indians. Only the strong and healthy being allowed to grow up and produce children, there is little variety of physical and mental development. Even were such a deformed child allowed to grow up, it would not easily find a mate and would die without leaving any children behind. In civilized countries deformities are propagated, as such people will find someone to marry them if they have fortune.

If an Indian has some deformed limb, either brought with it into the world or the result of an accident, he will secrete it as much as possible from the sight of other people, as such is considered a great disgrace. It would be an insult to ask him to show it or to even refer to it.[16] In case of a dispute among Indians one will immediately pick out the weak points in the personal appearance of his adversary.

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[14] See the illustration given by Sichults (09).

[15] The abbreviations for the tribal names used in the present study are the following: M.—Miskito; S.—Sumu; T.—Twahka; P.—Panamaka; U.—Ulwa.

[16] At the Sumuu village on Rio Coco the writer knew a Miskito who had lost several fingers on one hand through an accident at the gold mines of Pispis; from that time on he always carried a bandage around the mutilated hand. In the same village a young boy, having lost several toes, was continually wearing a shoe on that foot, although the other foot was always bare.

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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[17] T., P.: *wak;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from [177] both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *trausis*, from the English; T., P.: *kal-anin;* U.: *kalson*, from the Spanish "calzón") with the tails [439] generally not tucked in. They make these articles themselves from imported cloth or they obtain the finished garment by way of [287] trade. Formerly the Sumu used a sort of shirt or poncho, consisting merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open and the approach of rain he pulls his shirt off and covers it up with *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Now- [439] adays it is made of imported bright-colored cloth, but formerly the [287] common tunu bark cloth was used for this purpose. The upper part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *tatai* by the Sumu.

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[18] S.: *kiliura*) which hung down to the knees; it was beautifully embroidered with the down of the [531] muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalaswa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

[17] This name is mentioned in 1699 under the form *purpoy* (M. W.: 307, 308).
[18] Compare the word "huipil" in Mexican-Spanish.

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FESTIVAL DRESS (MISKITO).—M. W. (308) gives us a description of the gala dress of the Miskito which was worn on festal occasions. Besides the loin cloth the men wore cotton bands with bright feathers attached around their wrists and above and below the knees. The body, or the face only, was painted with pinewood charcoal, over which a "varnish" of turpentine was applied. On the breast was a thin plate made of a Spanish dollar piece beaten out flat, the successor of the gold plate met on this coast and in Costa Rica and Panama at the time of Columbus. Between the shoulders was suspended a tube made from a shin bone, with a bunch of feathers, while sea shells depended from the ears. A rod of bone or cane was worn at the pierced septum of the nose; a turtle hook, inserted in a perforation of the lower lip, supported a pendent plate of brass or shell.

Nowadays the Miskito wear on feast days old coats which they have obtained from the foreign residents. The bright-colored necktie, worn sometimes without any collar, is then allowed to fall over the coat. The socks, which are not worn on ordinary occasions, are pulled over the trousers like overboots. Bright-colored handkerchiefs (*afiksar*) are also in great favor.

FESTIVAL DRESS (SUMU).—At their festivals the Sumu of to-day paint the entire body red and black, so that it is impossible for them to recognize each other. At such an occasion their only clothing consists of a loin cloth and a headdress (*sira*). The latter is made from the split stem of a kind of bamboo, known locally by the Miskito name *bratara*, from which the bark has been taken off. The different slices are painted and then tied together with black cotton thread, and the cap thus formed is ornamented with the feathers from gaily colored birds, as parrots, macaws, and toucans, or the curly head feathers of the curassow. From this headgear depends a piece of "white tunu" or tree-bark cloth; this part of the cap is called *pakna*. It is painted with various designs, and hangs down the back to the hips. On the neck, wrist, and knee they wear, besides, strings of beads worked into designs; round the upper part of the arm they tie a cotton string to which small feathers have been attached.

HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumruru*, *sumuru*) or the English "straw hat" (*trahat*, *tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

FOOTGEAR.—Sandals are not known in the region under consideration, but they are used by the Paya. Moccasins are made occasionally by the Miskito, and shoes are bought in the local shops, but there are no native names for these articles. The women do not use any footgear at all except in the more advanced communities.

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PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. &. S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakwa;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

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the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *aual-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye."

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tiñ-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quartz, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

" According to Bell (b: 158) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

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301 ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima
[824] de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaika*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

FEATHERWORK.—Feathers from certain bright-colored birds, as
301 parrots, toucans, macaws, curassows, etc., are made into ornaments
287 by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art
232 of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from
[825] the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn
301 by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

NOSE AND LIP ORNAMENTS.—The nasal septum was formerly per-
301 forated for the reception of a rod of bone or cane, an ornament which
304 has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic earrings (M.: *kyama-kula, kyama-dusa, kul-dusa, bapriñ;* S.: *tapana*) and finger rings (M.: *mat-diñka, milta-diñka;* S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths. 301 304

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives. 302 [764]

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caeda* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females. 302 824

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus;* P., U.: *bas-kakna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing. 4/2 302

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

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302 other hair on the face, except that of the eyebrows and eyelids. The growth of beard was not liked and the hair was pulled out with the aid of two small thin sticks, between which they pinched it and plucked it out. A small stick of wood which had been partially split was also used for that purpose. Certain wood ashes were rubbed into the skin to check the growth. Now light beards and mustaches are sometimes met with.

DEFORMATION OF BODY

304 HEAD.—Head deformation (M.: *lal tanta daukaya;* T., P.: *tun labanin;* U.: *tun labanaka*) was until quite recently practiced by all the Sumu tribes except the Bawihka. The little child was placed in a [854] sort of cradle (M.: *kuhsat;* T.: *pala;* P., U.: *lim*), which was suspended by means of bast-fiber ropes attached to the roof, so that it could be swung like a hammock. A folding flap of wood or of the "bratara" reed at the top of the cradle was tied firmly to the crown of the head, a thick layer of cotton being applied to prevent injury. The infant was kept in sitting position and secured in the cradle in such a manner that it could not move the head at all. From time to time the bandages and the folding flap were removed in order to allow the child a little freedom. The mother suckled her baby without unswathing it from the board. The object was to flatten the top of the head, as the ordinary-shaped head was considered ugly. Some Indians told me that they did not like to have such a round head as a monkey. Grossmann (b: 4) states, however, that the head was flattened in order to adapt it to the broad, flat cap which is worn at festivals. As the Sumu wear the hair hanging square cut to the eyebrows in front, the peculiar flatness of the skull may escape the casual observer.

At the present time this practice has been abandoned altogether and the cradles have been replaced by hammocks. The first mention of head deformation among the Sumu appears to have been made by M. W. (304, 305, 307). A short description thereof as practiced by the Ulwa of Rio Escondido is given by Collinson (b: 149–150). The Miskito claim to have never practiced head deformation and they call the Sumu derisively *Lal-tanta* "Flat-head," which word corresponds to the Spanish "Chatos" found in the old documents. One of the early writers claims, however, to have observed the custom among the Miskito of Sandy Bay in 1709;[30] it is very likely that the Indians in question were Sumu slaves.

[30] Estos monstruos de las cabezas chatas tienen la costumbre de entablillarles a las criaturas cuando nacen, y en creciendo les falta la facción de la frente, sin distancia alguna del pelo de la cabeza a los de las cejas, que les hace imponderablemente horribles (Alcedo y Herrera: p. xviii).

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TEETH.—Formerly the Sumu used to file or rather chip their teeth to sharp points; this was a laborious process and was performed by placing a dull knife against the back of the tooth, while the front of it was tapped with a stone implement. 304

EARS.—In 1502, on the testimony of Columbus, certain of the coastal tribes living to the west of Cabo Gracias a Dios, whether Miskito or Paya is uncertain, distended their ears to such an extent "that they might put a hen's egg into them." This statement is confirmed nearly two centuries later by Exquemelin (Sp. ed.: 185; Engl. ed.: 102; French ed.: I, 294–295), who states that the Indians of Rio Xagua (Rio Aguan) on the coast of Honduras were called by the buccaneers "Great Ears" on account of their extraordinary and large ears. Dampier (I, 32) also mentions a curious manner of ear deformation current among the Kukra of Corn Islands during the latter half of the seventeenth century. Both sexes from these islands had their ear lobes pierced during childhood; "by continually stretching with great pegs the opening became as large as a milled five-shilling piece." They wore therein round, smooth pieces of wood, "so that their ears seemed to be all wood with a little skin about them." [171]

LEGS.—From the days of early infancy the Sumu females tie a narrow piece of cotton cloth firmly above the ankle and again below the knee. These bands, if ever removed, are immediately replaced by others. As a result of this custom the parts of the legs thus constricted are very thin, being hardly thicker than the actual bone, whereas the muscles of the calf bulge out to an abnormal degree. This custom, which was observed already by Dampier (I, 32) among the Kukra of the Corn Islands during the latter half of the seventeenth century, is also current among many Carib tribes of South America. Similar bands are occasionally worn by the females at the wrist and below the elbow, but here they serve merely the purpose of ornamentation. [171]

VARIOUS.—Circumcision is said to have been practiced in former days by some of the Sumu tribes, but the writer was unable to obtain any details regarding that custom. Until quite recently the face of the young Sumu was also scarified.

DWELLINGS

VILLAGES.—The villages (M.: *tāuan*, from the English "town"; S.: *çeañ*) are constructed generally along the waterways, as the sea, lagoons, or rivers, which form the principal means of communication. The Miskito of the lower Rio Coco and of certain parts of the Nicaragua coast have some large villages with from 100 to 500 inhabitants; but the Sumu settlements consist of only two to six huts and count from 6 to 25 inhabitants. On account of the danger from floods the inland villages are often perched upon high banks of the stream. 361

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342 Before starting with the construction of a house the Indians cut down all the bush and clear the ground around the site. All the big trees which are liable to endanger the house in case of storms are felled.
364 Refuse is thrown into the water; pigs, dogs, and vultures act to some extent as scavengers. Crude brooms are made from various low
412 shrubs or from the fan-shaped leaves of several species of *Acanthorhiza* palms.

342 TYPE OF HOUSES.—Both tribes construct rectangular dwellings (M.: *ulla;* S.: *o, u*), which are generally rounded on the short sides in the shape of a semicircle; in recent years the regular oblong form has become more common. Among the Miskito of Honduras the elliptical and the circular type are also found.

BUILDING MATERIAL.—No remains of stone houses have been discovered in this area. The dwellings of these primitive tribes are built of perishable material. They consist of four hardwood posts (M.: *playa;* S.: *kal, rahni*) supporting a sharply sloping, well-thatched palm-leaf roof (M.: *bahna;* S.: *tun*). The eaves of the latter reach to within 4 feet from the ground, so that one has to stoop in order to get into the interior. In the primitive Sumu hut there were also one or more central posts (M.: *masa;* S.: *tun rahni*) which were generally elaborately carved. The posts are generally of ironwood (*Dialium* sp.), sapodilla (*Sapota sapotilla* Coville) or cortés (*Tecoma chrysantha* DC.). Several varieties of palms, as the cohune (*Attalea cohune*), skomphra, col de gallo or suita (*Calyptrogyne sarapiquensis*), and caña danta (*Geonoma* sp.) furnish the leaves for thatching. The latter work is made very carefully and a well-made roof lasts from 6 to 10 years without needing any repair. No nails are employed in the construction of the hut, the various parts being held together with strong lianas.

ATTIC.—Most houses are provided with a sort of cockloft, or rude attic, which is immediately under the roof. It is called *tist* by both tribes, perhaps after the English "tent." It is formed by laying split bamboo across the beams, about 7 feet from the ground. Ascent to it is made by means of a tree-ladder (M.: *mina-mañka, yamna-mañka;* S.: *kalana*), consisting of a tree trunk wherein notches have been cut. Food is stored in the attic; it is also used as a sleeping apartment.

354 FIREPLACE.—The fire is made on the leveled mud floor, which is often raised a little to avoid dampness. The hearth (M.: *pûtawikta;* T.: *kuh-nanah;* P.: *koh-pani;* U.: *kuh-suruka*) is formed by three logs which are placed so as to form a "Y"; they do not quite touch each other, however, but there is a free space between them, where the fire is made. These three logs (M.: *pûta yuhk;* S.: *kuh-karan, koh suru*) support the cooking vessels; as the projecting ends burn gradually away, these logs have to be pushed forward

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from time to time. There is no chimney in the Indian hut, the smoke (M.: *kyasma*; S.: *wayao*) being allowed to escape through the roof, which consequently presents a dark brown color. This arrangement has the advantage of driving away the mosquitoes. 354

Modern huts.—In regions where the Indians have had much intercourse with foreigners they have improved their dwellings by the addition of side walls and by a floor of split bamboo or wood; the latter is elevated generally about 3 feet above the ground. The fireplace has then to be transferred to a small adjoining hut. In certain parts near the sea all the dwellings are erected on stilts, as the land is covered with water during the larger part of the rainy season. 342 177

In the interior the side walls (M.: *utla klar*; T.: *u dakna*; P., U.: *o itikna*) consist of a wattlework of split bamboo. The Miskito living near the seaside make use of the stem of the papta palm or the leafstalk of the siliko palm, set up vertically in the form of a stockade. This material seldom reaches as high as the roof; it is held in place by horizontally placed poles to which it is loosely tied. The coastal Miskito also employ a curious wickerwork of the split stem of the papta palm for house sides. Mud walls may occasionally be found and have been introduced by Ladinos or by the Black Carib.

Cattle and pigs are kept out of the interior by inserting several sticks crosswise in the doorway (M.: *utla-bila*; S.: *u-pas*, *o-pas*), or, in the case of an open shed, by building a rudimentary fence around the whole. In the more modern huts there is also a door and several windows, made of a framework of sticks, bamboo, and the like. The Indian dwelling of to-day is generally divided into two compartments of unequal size, the larger serving as living room and kitchen, while the smaller is used as dormitory.

Communal houses.—Formerly long communal or multiple family houses (palenques) were used by these tribes. Now only the individual family type is met with, which may, however, also be occupied by one or two married children with their respective families. The old communal houses were divided into as many compartments as there were families. Gimewald (22) gives a short description of such a Sumu dwelling from the Waspuk River; it measured 80 feet in length and 40 feet in width and was inhabited by a dozen families. Smaller multiple family houses appear to have been used in former days by the Miskito likewise; M. W. (381) states that Sandy Bay, the most important of their villages in these days (1699), consisted of twelve straggling houses with about 400 inhabitants. Formerly, when the various Indian tribes were continually engaged in wars, this arrangement facilitated the defense of their villages. 342

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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puhlak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *krikri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets
513 and as bed sheets (M.: *nina-pala, munta-pala;* T., P.: *dañ-rina;* U.: *dañ-paknak*); in Honduras the Miskito also use mats (*tnasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilár*, corrupted from the English; S.: *tunana*) are stuffed with cotton
[824] or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses.
[439] The mosquito nets, called *pabulo* by both tribes, are made of opaque cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wak*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

CRADLES.—In former days cradles (M.: *kuhsaá;* T., P.: *pala;* U.:
954 *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

352 STOOLS.—Low wooden stools (M.: *sulati;* T., P.: *sisá;* U.: *panba*) with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

1: Conzemius M-4. 5 (1921) 1932
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CHESTS.—Wooden chests or trunks, known by their English names, are used to store clothing and valuables. They may be of foreign manufacture or made locally from the Spanish cedar (*Cedrela* sp.). 352

ILLUMINATION.—Pine-wood torches are used for illuminating purposes. In certain regions where the pitch pine (*Pinus tenuifolia* Benth.) is absent or scarce the Indians make rude candles by surrounding a cotton thread with beeswax or with the gum of certain trees, as the rubber tree (*Castilla* sp.) or the locust tree (*Hymenaea courbaril* L.). Small baskets, filled with big tropical fireflies, are also used occasionally as lanterns by children. 354

VARIOUS.—The products of the plantation are generally thrown on the floor or put on the tables or in the attic. Little shelves are suspended from the rafters in order to keep cooked food, meat, or fruits free from the numerous creeping and crawling insects which infest the dwellings. 356

Under the roof are seen the various tools, the fishing and hunting implements; they are stuck in the thatch or held in crude racks. From the rafters depend bags of pine-wood soot, bottles with red pigment, and hair oils or small *piepis* gourds (*Lagenaria vulgaris* Ser.) containing shot.

DOMESTIC UTENSILS

FIREMAKING.—Fire was produced formerly by the "twirling" method. A notch was made in a piece of wild cane and a hard-wood stick placed in the cavity. This stick was held perpendicularly and twirled rapidly round and round until fire was produced. Cotton was used as tinder. A very curious method practiced by the Sumu or Paya of Rio Patuca has been described by the Franciscan missionary Fernando de Espino.[a] 372

Steel and flint were introduced in early days for kindling fire, but have now been replaced practically everywhere by matches of foreign manufacture. [71]

FIRE FANS.—In order to accelerate the flame a dozen feathers from large birds, generally the guan (*Penelope cristata*) are tied together in the shape of a fan (*M.*: *kusu-daya*; *S.*: *uklaus*).

TONGS.—Among the Miskito of Pearl Lagoon bamboo tongs or tweezers may occasionally be seen, to pull roasted plantains, cassava 412

[a] En cuanto Dios en lo mas retirado de la montaña un bejuco muy largo, sin, nudos, a manera de ramas de nimbres; cogen esta y cortanla en trozos pequeños de a palmo; pónenlos al humo, y en estando bien secos, cuando han menester fuego, cogen uno, y con las dos palmas de las manos la estrujan como al molinillo para hacer chocolate, y cuando ellos ven que está de cierto temple, soplan una punta o extremidad y por la otra parte sale fuego, y se enciende como mecha de escopeta, porque si en si se estopeso por de dentro. De otro modo sacan fuego, que es el comun de los indios, estregando un palo con otro (Serrano y Sanz: 367–368)

1: Conzemius M-4, 5 (1921) 1932
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412 or other food out of the hot ashes. This tool has also been observed among the Ulwa of Rio Escondido (Wickham, c: 200) and it is very common among the Rama and the Guatuso. The two last-named tribes, however, make these tongs from a small species of palm, the "caña danta" or "ahtak," which they call, like the tool itself, by the names *kiskis* (Rama) and *kaskas* (Guatuso).[33]

MORTARS.—Large wooden mortars (M.: *unu, no*) are found among the Miskito to pound grains and fruits with the aid of a hard wooden pestle (M.: *unu mihta*). The latter is generally single headed and tapers gradually toward the handle end; the double-headed type, which is practically cylinder shaped, is also found occasionally. This mortar has a wide distribution in South America, Africa and Oceania. It was found among the Miskito toward the end of the seventeenth century and is mentioned in those days side by side with the metate (M. W.: 307, 308).

METATES.—The Sumu do not know the wooden mortar, but they employ the metate or mealing stone (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) for grinding maize and cacao and for pounding fruits and berries. The common metate, which may be found in almost every household, is a flat-topped, natural river bowlder, with a rounded waterworn pebble serving as muller or "mano" (M.: *walpa mihta;* S.: *ki mak*).

415 COOKING VESSELS.—Light tripod iron pots (M.: *dikwa;* S.: *suba, yuasma suba*) are now found in every household, and have replaced the earthen vessels (M.: *sumi;* S.: *suba, sau suba*) for cooking purposes. In order to remove the hot pot from the fire the Indians use short wooden sticks with a hook at one extremity, which they put round the ears of the pot; it is known by the following names: M.: *tiškrus, piškrus;* T.: *iskrusta;* P.: *pan-alni;* U.: *pan-alka*.

WATER CONTAINERS.—Large calabashes with a small round hole cut in the apex, just large enough to insert a finger, are the common water canteens (M.: *kakmuntara;* T., P.: *sulun;* U.: *tamas*). This is the "goat" of the Creoles. Sometimes a corncob is inserted in the opening as a stopper.

Segments of the large species of bamboo are also used to haul water in certain regions. They are made from a section of bamboo stem, so that a nodal septum serves as bottom, while the stem is cut off immediately in front of the next occurring nodal septum.

Fermented beverages are stored in large earthen vessels (M.: *sumi;* S.: *suba, sau suba*); wooden casks of foreign manufacture and homemade troughs are also employed for this purpose.

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[33] The Cuna and Choco Indians of Panama use a similar tool consisting also of a double-beat sliver from the stem of a small palm, while the Ona and Yamana of Tierra del Fuego use a split tree branch for pincers. (Vide E. Nordenskiöld, Comparative Ethnographical Studies, vol. 8, Göteborg, 1930, pp. 65–67.)

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DISHES.—Calabashes (M.: *kahmi;* S.: *sutak*) take the place of plates, cups and glasses in the Indian houses; they are made from the fruit of the calabash tree, which is cut in two equal halves, and the soft watery pulp with the seeds removed. The thin, hard, woody shell is not fragile and lasts a long time. 415

By piercing such a calabash with small holes a strainer or collander (M.: *lili;* T., P.: *lilihna;* U.: *dilana*) is obtained; this is the "chachi" of the Creoles.

Large cups without handles, and basins are bought in the local shops; they are known by the name *mak*.

Square, round, or oval-shaped wooden bowls are made by the Indians of mahogany or other woods; they are known by their English names. These bowls are thick and clumsy and shaped like shallow basins; occasionally they are provided with very short, stout legs.

VARIOUS KITCHEN UTENSILS.—Flat withe baskets (M.: *usnuñ, uslun;* S.: *uslun, wah-taina, sidan*), hanging under the roof in the smoke of the fire contain large wooden spoons (M.: *kustara*, from the Spanish "cuchara"; S.: *pan-yamna*), called "pat sticks" by the Creoles, small single-headed wooden pestles or wabul sticks (M.: *tuskaya;* T., P.: *pan-tirina;* U.: *pan-ruknaka*), cacao stirring sticks or "swizzle sticks" (M.: *purbaya;* S.: *pan-korona, pan-poronaka*). These various utensils are made from Spanish cedar, mahogany, sapodilla, or rosewood.

Iron graters are seen occasionally. The Sumu have a native name (*pān-alna*) for this implement, while the Miskito call it by its English name.

The rough leaves of a small tree (*Curatella americana* L.) and of a vine (*Dasilla kunthii* St. Hil.) are employed instead of sandpaper for polishing purposes. Both these plants belong to the Dilleniaceae and are called "raspa-guacal," "hoja-chigüe" or "chumico" by the Ladinos; among the Miskito, Sumu, and Creoles they are known by the name *yahal*. 824 356

TOOLS

Before the discovery of America these Indians had few utensils and implements of stone; such articles were chiefly of wood, clay, shell, bone, etc. It would be nearer the truth to say that the Miskito and Sumu were living in the wood age instead of the stone age. Stone objects are, of course, the ones which have been preserved mostly. Fish teeth, snail and tortoise shells, quartz, flint, pebbles, and the like were used as scraping implements. Knives of bamboo are still used to sever the naval string of newborn babies. 412

MACHETE.—The machete (M., T., P.: *ispara*, from the Spanish "espada"; U.: *maset*), a heavy cutlasslike knife of about 2 feet in length, is the vade mecum of these Indians. It is their faithful

1: Conzemius M-4, 5 (1921) 1932
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4/2 companion at work and on voyage, and the main tool in house, garden, field, and bush. The Indian uses it to dig postholes for his house, to cut down small trees, shrubs, lianas, grass, or weeds. With the machete he cuts down the underbrush when making a plantation and clears the latter from time to time of weeds and young bush. With the machete he also defends himself against wild animals, snakes, and the like, and, if necessary, against his own kind, which is often more dangerous than the wild beasts of the forest.

[439] Formerly all the machetes used on the Mosquito Coast were imported from England, but in later years they were brought from the United States and from Germany.

4/2 3/3 AXES.—The Indians are very good at plying the ax (M.: *asa*, from the Spanish "hacha"; S.: *ki*, *kidak*), as many of them have been working at the mahogany camps. The export of this valuable wood has been going on with various long interruptions for over two centuries. Even the women handle the ax fairly well, and cut up small tree stems to be used as firewood. The rectangular-shaped so-called American felling axes or Canada wedge axes are preferred by these Indians; in shape they resemble somewhat the *tuba* fish, and for that reason the Miskito call them *tub'asa*.

4/2 17/2 STONE AXES.—Single or double bladed stone axes or celts (M.: *alwani mahbra*, *imyula mahbra*; S.: *alwana suma*, lit.: "thunder egg" or "lightning egg") have been unearthed in various parts of the country. They are grooved or ungrooved, and were firmly fixed in the thick part of a stone-cut wooden handle, or the handle was merely tied firmly to the ax with the aid of a withe passing around the groove. Some of these celts were provided with a short handle cut of the same solid rock. Dampier (I, 85) mentions some good grooved axes among the Indians of Rio Escondido (Kukra-Sumu), which were "flat and sharp at both ends," and were 10 inches long, 4 inches broad, and 3 inches thick in the middle.

Two simple stone axes from the Mosquito Coast have been depicted by Bovallius (II, 299, figs. 81, 82). Three fine monolithic axes from the Bluefields region have been described and illustrated by Saville (b: 34–36, fig. 15). The blade of these axes is of a form foreign to Central America, resembling certain axes from the Lesser Antilles and northern South America. In these three specimens the rounded handle, which has a length of 12 to 12¼ inches, is slightly curved. They are respectively in the Museum of the American Indian, Heye Foundation (a), the Peabody Museum of Harvard University (b), and the United States National Museum (c). The first one of them (a) was acquired in 1924 in Nicaragua by Mr. D. E. Harrower. The blade is comparatively longer than in the other axes of this type and the handle is elaborately finished, being decorated with three series of longitudinal grooves. The second ax (b) is carved from a

1: Conzemius M-4, 5 (1921) 1932
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heavy, compact, brownish-green stone with decorations somewhat similar to the preceding one, but the handle has, besides, three transverse oval decorations over the section adjacent to the blade. The third specimen was collected by Mr. J. O. Thomas of Bluefields. It is plain and made of indurated volcanic tufa. The two last-mentioned axes (b and c) have already been described and pictured in a previous publication by Saville (a: 10–11, pl. v, Nos. 5 and 4). Another beautiful ax, perhaps of the same type, with blade and handle carved of one piece of heavy, compact, light-colored rock, was unearthed at Bluefields in 1849 and is now in the Museum of the Moravian Mission at Herrnhut in Saxony.[8]

A beautifully shaped double-bladed stone ax was obtained by Boyle in 1866 on the upper Rio Escondido and pictured by him (b: II, 144, fig. 1); it is now in the British Museum. It is apparently of volcanic stone and is 17¾ inches long and 12¾ inches wide across the blades. The end of the flat handle is perforated. The illustration has been copied by Bancroft (IV, 59, fig. 3) and by Joyce (18, pl. I, fig. 1). Saville (a: 11–12, pl. VI, fig. 1) describes and illustrates this ax together with two other double-bladed specimens from the Atlantic coast of Nicaragua, which are fashioned from an igneous rock, possibly diorite. These two were obtained from a Miskito chief by Mr. J. O. Thomas of Bluefields and are now in the United States National Museum. The largest one of them (Saville, a: 12, pl. VI, fig. 3) is 10¾ inches long and 6¼ inches across the blades; the handle is rounded and has a conical end. The other specimen (pl. VI, fig. 2) is only 8¾ inches in length and 7¾ inches wide across the blades. Like that illustrated by Boyle, it is perforated through the end of the flat handle. Other stone axes from the Mosquito Coast are in the collection of Doctor Heubaus in the Museum für Völkerkunde in Berlin (Lehmann, b: 715).

The modern Indians do not know that these stone axes are artificial and that they are the work of their forefathers. They believe them to be "thunder-bolts," as do also the Creoles and Negroes; the same idea is also entertained by the Ladinos, who call these celts "piedra de rayo." It is very probable that these antique axes were also used as defensive weapons in former days, and perhaps also for ceremonial uses.

ADZES.—Adzes are now very common and are used for the making of canoes and other objects of wood; they are used in similar manner as those of our joiners and carpenters. This tool is probably of post-Columbian origin, although the Sumu have a native name (paris) for it; the Miskito call it *ats* from the English name. Stone adzes have never been found on the Mosquito Coast, although they are frequently

[8] Cf. Frederick Starr in Internationales Archiv für Ethnographie, Leiden, vol. v, 1892, pp. 88–89.

1: Conzemius M-4, 5 (1921) 1932
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412 met with in certain parts of South America. The ordinary stone ax may also have been utilized as an adze by merely shifting the handle fixation from a vertical to a horizontal plane.

HOE.—In many huts a hoe can be found nowadays; it is used on the fields and in clearing away the grass and weeds growing in front of the dwellings. The hoe is of recent introduction and is known by its English name (u).

KNIFE.—Large knives (M.: *skiro*, *kisuro*, from the Spanish "cuchillo"; S.: *kohbil*) now form part of every household.

252 SUGAR MILL.—A primitive sugar mill (M.: *trahko;* T., P.: *tisnak tfihnin;* U.: *tisnak panka*) is employed by these Indians to squeeze the juice out of sugarcane. A stout post is buried partly in the ground, so that it will reach about 3 or 4 feet above the surface. Close to its upper extremity a wooden slab is mortised in and wedged tight. Just above this slab, which looks like a small platform, there is a hole in the post, where a stout bar (M.: *mihta;* S.: *tik*) fits loosely. One of the women lays a piece of cane on this "platform," her husband inserts the pole in the hole and presses downward, crushing the cane, whereupon the juice flows into a receptacle placed on the ground. The woman slips the cane forward until every part of it is crushed, and finally twists it like a rope to wring out all the juice.

252 171 This mill is common in the regions bordering on the Caribbean Sea. Several mills of this type, found in South America and on the Isthmus of Panama, have been figured by Nordenskiöld.[24] It is well known that sugarcane was introduced into the New World by the Spaniards; still this type of mill is never met with among the whites. On the other hand, the negroes of eastern Central America and the Bush negroes of Guiana use it commonly, more so than the Indians themselves. According to the prominent African specialists Seligman and Lindblom, sugar mills of this type are not met with in the Dark Continent. Neither are they known from Melanesia. Nordenskiöld[25] believes, therefore, that this implement has been invented by American Indians in post-Columbian days, when they had become acquainted with sugarcane. In view of the fact that this sugar mill is more common among the negroes than among the Indians, I am inclined to believe that it is a post-Columbian invention made in America (probably in the West Indies) by negro slaves, who were largely employed on the sugar estates. Even to this day it is not met with among the Sumu of the interior, who crush the canes in primitive wooden roller mills turned by handspikes (cf. Wickham, b: 216; c: 206).

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[24] Comparative Ethnographical Studies, vol. VIII, Göteborg, 1920, pp. 80–84, figs. 39–43.

[25] Ubi supra, p. 43.

1: Conzemius M-4, 5 (1921) 1932
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DIVISION OF LABOR

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DOMESTIC WORK.—Such domestic industries as spinning, weaving, and the manufacture of pottery, bark cloth, and bead ornaments are female occupations. Tailoring is, however, frequently in the hands of the men, some of whom even make the clothes for their wives. The preparation of food is strictly reserved to the women, the men never condescending to do any cooking, except while away from home. The barbecuing of the chase is, however, the work of the men.

FIELDS.—The husband prepares a patch of the forest for the making of a plantation, by cutting down the trees and cleaning the ground by burning; but the care of the field, that is the planting, weeding, and reaping of the crop, is left to the women.

OTHER OUTSIDE OCCUPATIONS.—The manufacture of fishing and hunting implements, and of canoes and accessories thereto, are man's work. The women fish with the hook, but all other methods of fishing are reserved to the men. The latter fell trees for firewood and cut them into convenient lengths to haul, but the females have to fetch and split it. The woman goes to the waterside to bring the game which her husband has killed and brought in his canoe, but she never accompanies him on the actual hunt, being unacquainted with the handling of hunting weapons.

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LOAD CARRYING.—The carrying of heavy loads is usually left to the women. For this purpose they use a carrying strap, known by the local Spanish name "bombador" or "bambador." The latter consists of a narrow strip of bark cloth, both extremities of which are attached to the burden. The load is first lifted on the back with the assistance of another person and then the pack strap is put around the forehead. The male Indians do not carry anything in this manner, but they secure the package to the back with the aid of shoulder straps, as do the Ladinos. The Spanish-speaking women, however, carry loads generally upon the head, as is the case with the negroes of both sexes. When very tired the Indians give a sort of whistle to catch their breath (M.: *witka pubbaya;* T. & P.: *witka wupdamka;* U.: *witka wupdamaka,* lit.: "to blow the breath").

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DAY LABOR WORK.—In former days many young Miskito, living to the west of Cabo Gracias a Dios, went annually to British Honduras to work there in the mahogany or logwood camps. They left about May and returned in November or December. During this time the settlements on the coast were practically without male inhabitants, except for the boys and old men. The women then had to subsist on fish, crabs, oysters, cockles, the eggs of alligators, turtles, and iguanas, and vegetable food. Now all these Indians easily find work in their own country, either in the mahogany camps or in the

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444 gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, [511] even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

438 INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by [439] barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[20] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

556 These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

317 FORMER ARTICLES OF BARTER.—The Miskito used to evaporate salt from the water of the sea and lagoons and collect pretty sea 438 shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

484 During the latter part of the seventeenth century, and for many years following, the Miskito undertook daring sea voyages as far south as Chiriqui Lagoon in Panama, and occasionally even beyond that region. These expeditions were, however, not organized with peaceful trading in view, but for the purpose of stealing cacao from [721] the Spanish settlers at Rio Matina (Costa Rica), and capturing Indians to be sold to the English traders of Jamaica.

439 PRESENT-DAY COMMODITIES.—Nowadays the Indian's wants from the outside world are many. The Miskito, who are less primitive than their neighbors, were already in commercial relations with

[20] According to G. N. Collins (see Safford in Smithsonian Report for 1916, p. 421) this use still persists in the Mexican State of Chiapas.

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.: 308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Piapia mining district, around Cuera Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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316 this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *likwas*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

301 439 411 Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

324 METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mikta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-silka;*[*] T., P.: *pranza, paranza;* U.: *ki-tisna*).

324 172 ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[*] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cuabul" (= *kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *silka* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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short distance from a small creek. A picture of one of these sites is given by Spinden (536). Occasionally these antiguales are surrounded by low walls, perhaps remains of former fortifications; others again were apparently defended by ditches and perhaps by palisades also. 324 172

ANCIENT METATES.—The metates found in these deposits are supported by three long, well-centered legs, which are generally covered with geometric designs; in front there is a bird or animal head (eagle, turtle, alligator, or jaguar). The Indians occasionally dig them up to be used in their households. Some fine specimens have been broken by man or by falling trees. Giant metates, which may reach over 6 feet in length, are still found, but the sculptured head has generally been removed from them. They remind us of the wooden stools still found in the Indian dwellings and it is very likely that they were used as ceremonial seats. In the Museum of the American Indian, Heye Foundation, there is a metate from the Mosquito Coast (Hodge: 56). Several large specimens from an important site discovered near Cucra Hill (to the south of Pearl Lagoon) about 30 years ago upon clearing the land for making banana plantations are in the American Museum of Natural History. The Peabody Museum of Harvard University also owns a few metates from the vicinity of Bluefields. [531]

ANCIENT BOWLS.—Cylindrical bowls with three short legs and made from a very hard granitelike rock are also found in the above-mentioned old sites, but they are less common than the metates. Two knobs near the rim, carved into bird or animal heads, serve as handles. These bowls or vases are ornamented with geometric motives, of which the most common is the incised guilloche, or rope pattern, of either curvilinear or angular construction.

The first description, accompanied with illustrations, of these "granite vases" from the Mosquito Coast is given by Pownall (318–324, pl. XXVI), who figures three of these objects. Two of these belonged to Lord Hillsborough. One of these latter (No. 1) is very small and has an animal head on one side. The larger one (No. 2) is more interesting; it is about 12 to 15 inches in diameter and 10 inches in height, with plain legs. There are two rows of diamond-shaped ornaments on the body of the vessel; the two handles take the form of a head and a tail, but the head is partly broken off. The third vessel (No. 3) is about 10 to 12 inches in diameter and height, but at the top it is somewhat narrower; it has carved legs and two head ornaments and is perhaps the best specimen in good condition found in the country. The bowls No. 2 and No. 3 have been reproduced by Humboldt (I, p. 238, and II, pl. 39) and by Dupaix (I, div. II, 27–28, and II, suppl. pl. VII, No. 1). The illustration of No. 3 has been copied also by Bancroft (IV, 26).

1: Conzemius M-4, 5 (1921) 1932
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Pownall (319) refers to another of these bowls in the British Museum, which belonged to a collection brought from Jamaica by Sir Hans Sloane. This is perhaps the one depicted by Joyce (p. 74, pl. VI, fig. 1) which resembles No. 3 described above.

In 1921 the writer found a number of these vessels, but all badly broken up, on the right bank of Rio Paulaya. Some of them were not detached from the quarry out of which they were formed. It is, however, not known from what site the marble was quarried. Bowls of similar material and technique have also been met with in the Bay Islands and in the valley of Rio Ulua. A large specimen is in the Museum of the American Indian, Heye Foundation (Hodge: 56).

STATUES OR CARVED PILLARS.—At certain old sites may be found some high slabs of stone which were originally placed upright, reminding one of our tombstones. Nearly all of them have now tumbled down. Occasionally some greatly obliterated geometric designs, or spirals, may be found on them.[28]

Spinden (539) pictures a stela or stone pillar on Rio Tocomacho (Honduras) which is 8 feet in height and nearly a foot square. It is covered on all sides with pictographic designs, chiefly spirals and scrolls; on one of the four faces there is a grotesque figure with a reptilelike creature on its head. Such stone pillars may also be found in other parts of the Mosquito Coast, but they are not common. Large stone statues, attaining as great a height as 12 feet, are, however, the outstanding feature of the archeology of the Pacific half of Nicaragua, especially of the great lake region.

Le Baron (217–222) describes and depicts some stone ruins from the left bank of Rio Prinsapolca, about 134 miles above its mouth. They consist of three monoliths, about 8 feet high, forming a triangle; the ground between them was paved with stones. These monoliths had fallen to the ground and were broken; on some of the faces there were rude carvings, greatly obliterated.

CARVED ROCKS

Pictographs may be found on the rocks in the bed of nearly all the larger streams, generally at the rapids and falls. They must have been made many centuries ago, for they are considerably waterworn, and often may be followed easier with the finger than with the naked eye. Many of these carved rocks are visible during the dry season only and are completely under water during the rainy months, owing to the rise of the rivers. (Fig. 1.)

WHERE THEY ARE FOUND.—Such carved rocks have been observed by the present writer at different places on the Rio Coco (at Wirapani,

[28] The modern Indians have no traditions concerning these ruins found in their territory, and ascribe them to the evil spirits.

1: Conzemius M-4, 5 (1921) 1932
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Waspuk, Kiwras, above Raiti, at Kunkun mawan and at Tawit); they are known to exist also in the rivers Plátano, Patuca, Wawa, Prinsapolca, Tuma, Punta Gorda, Indio, and Maíz. They appear to be particularly numerous on the Siquia and Mico, which two streams together form the Rio Escondido or Bluefields River (Boyle, b: I, 296–299; Pim and Seemann: 401; Wickham, b: 243, 245; Belt: 52–53). Some extravagant stories of great statues carved in human and animal shape and hewn out of a solid cliff on the upper Rio Mico have been circulating on the coast, but it appears that these giant statues are merely rude carvings on the rocks similar to the ones found in other parts of the country. Carved rocks are found in many rivers emptying into the Caribbean Sea, and a good account of those met with in South America has been given by Koch-Grünberg.[39] The geographical names Gualpulban (M.: *walpa-ulbas*), Quiulna (T., P.: *ki-ulna*) and Quiultan (U.: *ki-ultas*), which are found scattered in various parts of the Mosquito Coast, may furnish a clue to the presence of such pictographs in the neighborhood. These various names mean "written rock" or "painted rock" and correspond to the Spanish "piedra pintada."

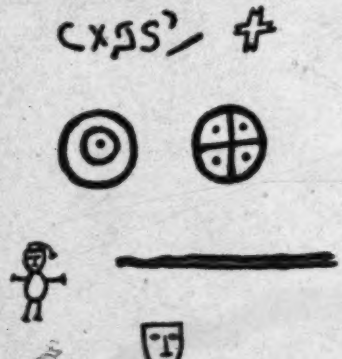

FIGURE 1.—Carved rocks from the Kirwas Rapids (Rio Coco)

MOTIFS.—The carvings consist chiefly of very curious figures, which it is often difficult to identify. Sometimes they represent human figures, but the greater part of them appear to be animal designs: jaguars, alligators, monkeys, frogs, tortoises and serpents. Occasionally geometric figures, as spirals and scrolls, are depicted, but floral designs are conspicuous by their absence. Sapper (a: 275) pictures some carved rocks from various parts of Rio Coco: Valpa ilpan (=Wirapani), Kiulna (=Kunkun mawan) and Davuit (=Tawit). A photograph of a large bowlder with carved figures from Rio Plátano is given by Spinden (537).

ARTISTS.—We do not know who were the authors of this work. The Miskito are by all means out of the question, for they are comparatively new immigrants into the regions where pictographs are to be found. They ascribe them to the Sumu, who formerly occupied most of the territory in question. But the latter Indians are unanimous in declaring that this work was done by the evil spirits (*walasa*) at the time when the rocks were still soft.

[39] Südamerikanische Felsenzeichnungen. Berlin, 1907.

1: Conzemius M-4, 5 (1921) 1932
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172 WRITING.—The carvings on one of the bowlders at the Kiwras Rapids on Rio Coco are said to resemble somewhat the characters of the Latin alphabet. Wickham (b: 245) heard of some "writing" on rocks of Rio Mico, which he considered—quite erroneously of course—inscriptions in Latin made by the early Jesuit missionaries. Neither Miskito nor Sumu appear to have possessed the art of writing as did their western neighbors, the Nicarao and Chorotega. According to Oviedo the two latter tribes had books of parchment made from deer skins. Picture writing was also practiced, and is still, by the Cuna Indians of Panama, as has recently been ascertained by Nordenskiöld.[29]

RUBBER COLLECTING

314
439 In former days the Indians used to collect rubber from a wild-growing tree (*Castilla* sp.), which is found nearly all over the country. This industry started about 1860, first on Rio San Juan, and gradually spread to the remainder of the Mosquito Coast. The Indians sold their rubber to the local merchants, who generally made large advances to them. About 1912 and 1913, when the export of rubber ceased, owing to the low price caused by the large production of plantation rubber in the British and Dutch East Indies, many Indians found themselves heavily in debt to the merchants.

314 The rubber collectors or "huleros" first made a rude ladder out of the lianas that hang from the trees; this was done by tying short pieces of wood across them with the aid of smaller lianas. Later iron spurs were introduced and attached to the feet to climb the trees. With the machete they then scored the bark with cuts having the shape of the letter V, the point being downward. Such cuts were made all the way up the trunk, at a distance of about 3 feet from each other; they extended nearly round the tree, but the latter was on no account to be completely girdled. At the bottom of these series of cuts a spout was inserted to conduct the latex juice into buckets or other containers. In about half an hour all the whitish milk had run out of the tree.

Afterwards the latex was strained and caused to coagulate by the addition of an alkaline decoction made from the juice of the chajmol vine (*Ipomoea bona-nox* L.; M.: *tatako;* T. and P.: *tutuk;* U.: *ulupuy*) or from that of a liana (*Calonyction speciosum*); this was combined with the latex in the proportion of 1 pint to 2 gallons. To prevent putrefaction coagulation must be effected within about 24 hours after the collection of the milk. The resulting mass was then made into round flat cakes, which were exported under the name "sheet rubber"

[29] Picture Writings and Other Documents. Comparative Ethnographical Studies, vol. 7, part 1 (1928) and part 2 (1930).

1: Conzemius M-4, 5 (1921) 1932
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(Spanish "torta" or "plancha"). The milk, adhering to the cuts made into the bark, blackened upon exposure to the sun and air; it was left to coagulate there, and then wrapped up in bundles separate from the other rubber. This was shipped mostly to New York, where it was known as "scrap rubber" or "picket rubber" (Spanish "burucha," the "sernamby" of the Brazilians). In later years the spot at the foot of the rubber tree was cleared and the milky juice was allowed to drop to the ground, taking its own time to coagulate. After a couple of weeks, when it was sufficiently dry, it was rolled up and made into bundles varying from 50 to 200 pounds in weight. This is the "strip rubber" of commerce (Spanish "tira" or "cuera").

When this industry started in 1860 large rubber trees from 4 to 5 feet in diameter were not uncommon. These yielded, when first cut, about 20 gallons of milk, each gallon of which furnished 2 pounds of rubber. After an ordinary bleeding the tree soon recuperates, and may be tapped again the following year. Unscrupulous collectors merely felled the tree in order to facilitate the work. By this pernicious method large trees have been made to yield over a quintal of rubber, but gradually all the big trees were killed and even specimens measuring 3 feet in diameter became rare. Many huleros then adulterated the rubber with the latex derived from the tunu tree; the resulting mixture being less elastic, and consequently of inferior quality, the product from the Mosquito Coast yielded a lower price than that from other regions of Central America.

Previous to 1860 rubber was collected in thick circular cakes, which were used only to make black paint from the melted gum.

MANUFACTURE OF BARK CLOTH

In the northern part of the Mosquito Coast a coarse brownish cloth is pounded from the inner bark of a tree closely related to the rubber tree (*Castilla* sp.). The cloth, as the tree itself, is known throughout the country by the Miskito name *tunu*,[31] while the Twahka and Panamaka call the tree *tikam*, and the finished product *amat*.[32] The tree does not grow in the region inhabited by the Ulwa, and these Indians use the bark of the rubber tree (*tas*) for the manufacture of bark cloth, which they call *tas-bûena* "pounded rubber."

USES OF BARK CLOTH.—Nowadays bark cloth is made almost exclusively into "sheets" or "blankets" for the bed, and into loin cloths (M.: *palpura*; T., P.: *wah-uto*; U.: *ani*). In former days it furnished the clothing for rich and poor, although the gala dress, of men of rank at least, appears to have been of cotton.

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[31] This name is already found by M. W. (307, 308) in the form *tone*.

[32] *Amatl* or *quauhamatl* is the Mexican name for a species of fig, the bark of which was made into paper and clothing.

1: Conzemius M-4, 5 (1921) 1932
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287 PREPARATION OF TUNU CLOTH.—The tunu tree is cut down and deprived of its bark; the latter is then soaked in water for a few days, after which the sticky gum or milk adhering to it is scraped off. The bark is then dried in the sun and kept in the hut until the women find time to pound it into cloth. In this state it is called *kusni* by the Miskito, Twahka, and Panamaka, and *kusku* by the Ulwa. As it becomes hard and shrinks considerably, it has to be submerged in the neighboring stream for a short time before the pounding of it begins. The latter operation is performed on a small log [33] (M.: *tus-dusa;* S.: *laślaś*) with the aid of a wooden mallet having the shape of a short thick club, into which longitudinal ridges have been made at the head part. This mallet is known by the names *kakka* and *para*, after the two small species of palm, from the stem of which it is made.[34] The Miskito living around Brus Lagoon and on the lower Rio Patuca also make use of the stem of a small fan-leafed palm which grows in that region and is known to Indians and foreigners by the name "palmetto." The bark extends gradually upon being pounded, and it becomes soft and flexible. After being washed and dried, it is ready for use, and has a brownish color. In Oceania the same process is employed and a similarly shaped mallet is used to manufacture the bark cloth, known by the name "tapa," but the tree of those regions is a species of Morus.

WHITE BARK CLOTH.—A similar cloth, but almost white in color and of superior quality, is obtained by the same process from the inner bark of a species of Ficus (S.: *yakuta, yakanta*) and likewise from the rubber tree (*Castilla* sp.). But in both cases the manufacture of the cloth is more laborious. The cloth from these two trees is known locally as "white tunu" (M.: *tunu pihni;* S.: *yakanta, tas-kanna*); it [754] is used by the sorcerer in connection with incantations. For this purpose the sukya marks it with designs in black and red obtained with the aid of clay, charcoal, or vegetable juices.

Raveneau de Lussan (439) mentions the manufacture by the Miskito of clothing and covers from the "bastard palm"; the present writer ignores what kind of tree is meant thereby, as no part of any palm is utilised nowadays for such a purpose.

CERAMICS

323 Pottery making is rapidly becoming a lost art among the Sumu, owing to the introduction of iron and cheap tinware, while it is entirely unknown to the Miskito of the present day. The Sumu from Rio Bocay have attained some skill in making earthenware of different

[33] According to Exquemelin (Engl. edit.: 251) the Miskito were pounding their bark cloth upon stones around 1671.

[34] It is not uncommon that the plant, which furnishes the material, gives also the name of the tool.

1: Conzemius M-4, 5 (1921) 1932
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shapes and sizes for hauling water, storing food and intoxicants, and for cooking purposes.[38] 323

POTTERY OBJECTS.—The various kinds of pottery vessels used for cooking and for storing liquids are known by the general name *sumi* among the Miskito, and *suba* or *san suba* among the Sumu. Some of the large jars used in fermenting intoxicants reach 4 feet in height. Griddles are unknown to the Miskito; they are called *liwa* (T., P.) and *lawa* (U.). Jugs or water jars are known as *putiss* (M.) and *sutpanak* (S.); a small bowl, which is seen chiefly at the festivals, is called *ušikra* (M.), *sumai* (T., P.) or *ušikara* (U.). Most of these vessels, especially the larger ones, are slightly pointed at the base, so that they have to be placed in a cavity of the mud floor, or they are propped with stones to keep them upright. The fruit of the calabash tree served as an early model for the pottery vessels, and several types recall the shape of that fruit. Tobacco pipes (M.: *tuaka sina;* S.: *aka pan, aka paña*) are also made to the present day, while pottery whistles have been found in the old burial grounds. 415

MOLDING.—The making of the pottery is exclusively the work of the women. Potter's clay (M.: *slaubla;* S.: *saw*), noted for its good quality, may be hauled by the Indians from a great distance. The material is broken out of the ground with the aid of a strong, pointed stick. After being cleaned of all foreign particles it is mashed with the hands and mixed with water.[39] The clay is molded by hand, for the potter's wheel, like any other kind of wheel, was unknown in America in pre-Columbian days. Smaller vessels are shaped directly out of a lump of clay placed on a heavy wooden board upon which a large bijagua leaf has been placed; this leaf is continually turned round in the process of shaping. 323

In case a larger vessel is manufactured, the bottom portion is likewise shaped directly out of a lump of clay, and the walls are built up, not of one continuous coil, but of several, each succeeding one adding to the height of the pot. Old broken pottery vessels clearly show the coils by which they were built up.

When the desired height has been reached, the upper edge is neatly trimmed with the aid of the fragment of a calabash shell, wherein an indentation has been made, corresponding to the contour the vessel is to receive. When the latter is partly dried, it is polished with the aid of a smooth pebble.

FIRING.—After having been allowed to dry slowly in the shade for several days the ware is placed in a fire made on the ground in

[38] The present-day Miskito rely entirely on the more convenient and durable iron cooking pots for cooking purposes, but they still obtain, by way of trade from their Sumu neighbors, large clay vessels for the storing of *mishla*.

[39] Wickham (c: 207) mentions the Ulwa of Rio Escondido tempering the clay by mixture with a proportion of ashes from the bark of a certain forest tree, collected and burned for the purpose.

1: Conzemius M-4, 5 (1921) 1932
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323 the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many 323 parts of the Mosquito Coast, chiefly in old burial grounds, indicate 172 a much greater skill in this art than that possessed by the present- 531 day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, 172 probably the Sumu territory, the discovery of human heads, busts or 532 entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

248 CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

286 A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving 462 it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

286 TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dŏk;* U.: *ani*), girdles or

1: Conzemius M-4, 5 (1921) 1932
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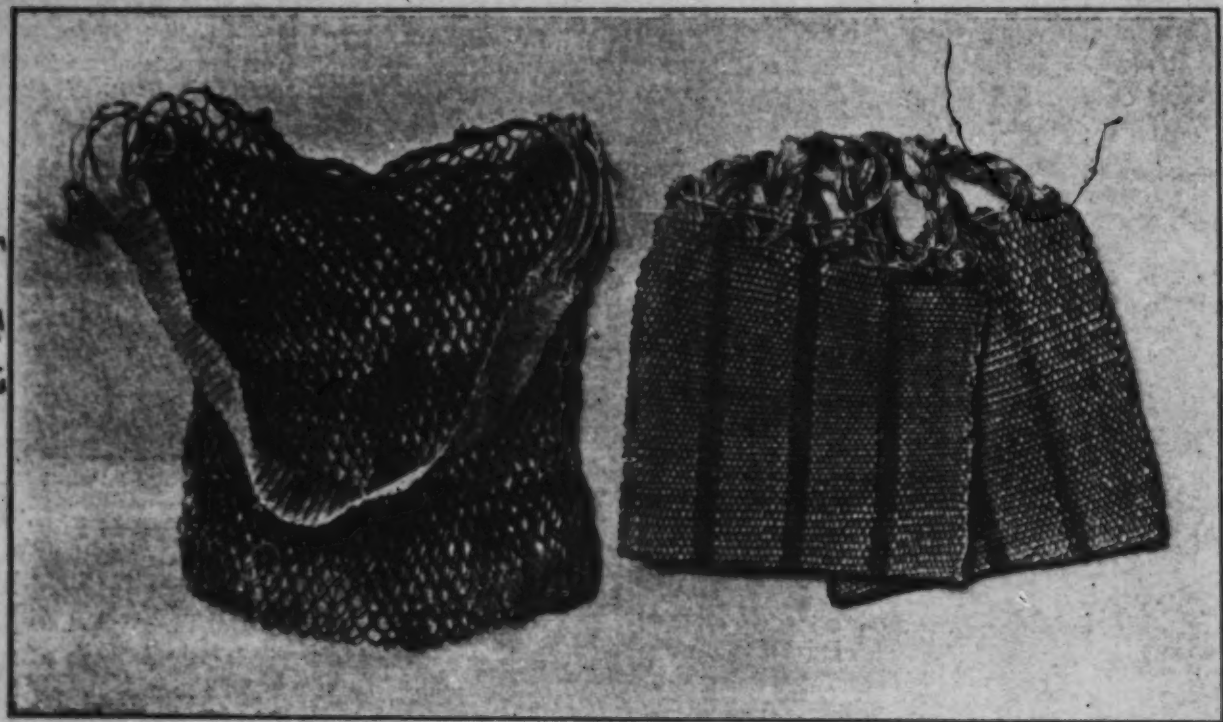

a b

a, Net carrying bag made from the fiber of the pita or silk grass plant. Sumu of Rio Patuca; b, saddlebag made by the hispanized Sumu of upper Rio Grande

[p. 50A]

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1: Conzemius M-4, 5 (1921) 1932
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FOUR COTTON GIRDLES AND A PIECE OF COTTON CLOTH TO BE USED IN MAKING A HUNTER'S BAG

Sumu of Rio Bocay and Rio Waspuk.

[p. 50 B]

1: Conzemius M-4, 5 (1921) 1932
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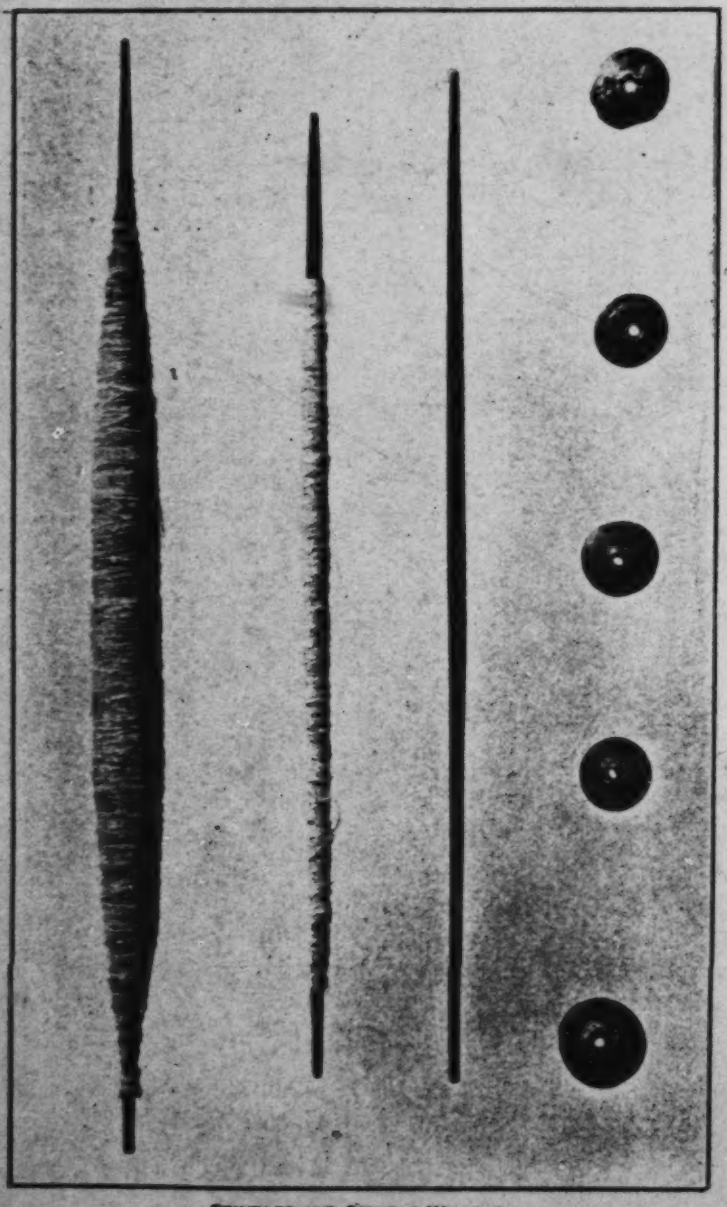

SPINDLES AND SPINDLE WHORLS
Source of Rio Bocay and Rio Waspuk.

[p. 50 c]

1: Conzemius M-4, 5 (1921) 1932
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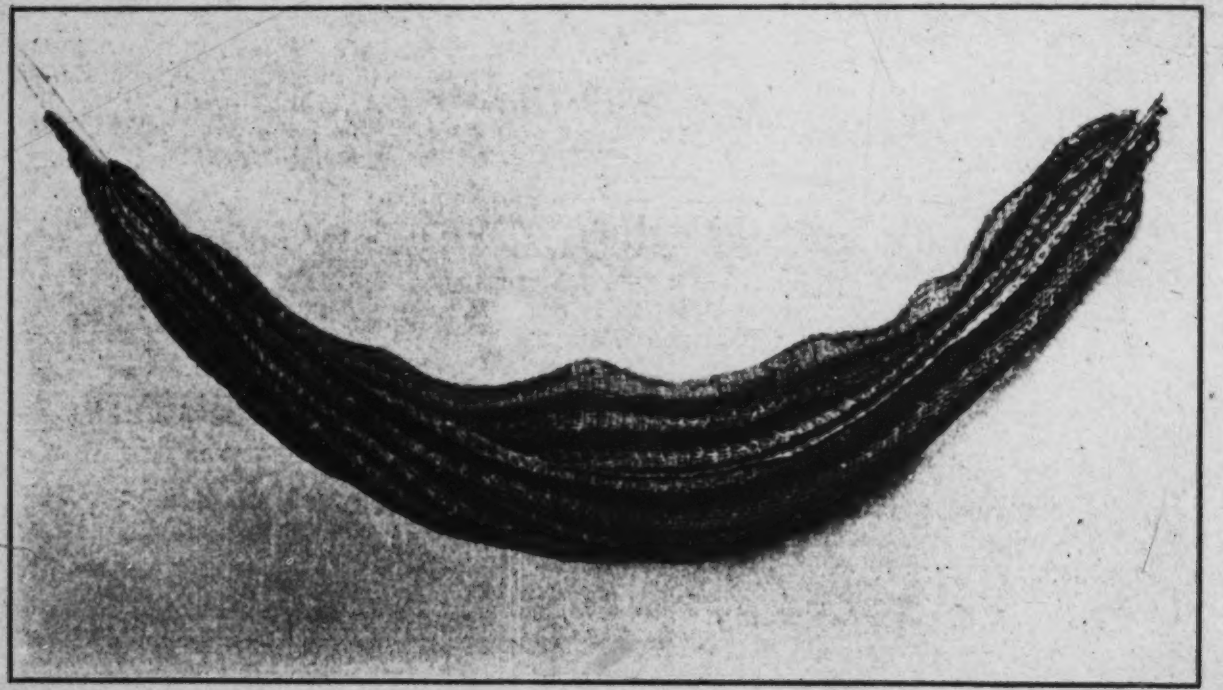

HAMMOCK MADE FROM THE BAST FIBER OF THE SAHI TREE
Miskito of Rio Platano.

[p. 50 b]

1: Conzemius M-4, 5 (1921) 1932
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sashes (M.: *yalasawa;* S.: *bamaksitna*), hammocks (M.: *silmika;* S.: *wah*), and into shot bags or hunter's bags (M. and S.: *malipuk*). The long sleeveless garment, called *wipal* by the Miskito and *kiñkura* by the Sumu, is not made any longer. All these cotton textiles, although coarse in texture, are soft to the touch. They are of excellent quality and the patterns are always inwoven. Sometimes a fringe of the white down of the muscovy duck extends all round the selvage. According to Exquemelin (Engl. edit.: 251) bed sheets were also made of cotton in former days by the Miskito.

Spindle.—The spindle (M.: *blakat;* S.: *malkat, malakat*)[27] consists of a shank made from the hard wood of the pejivalle palm. It measures from 1 to 1½ feet in length and tapers to a point on both ends. The whorl or fly is inserted at about 2 inches from the lower extremity, and the whole presents the appearance of a gigantic top. The whorl is usually made of a rare, very hard and heavy marblelike rock, which occurs in different colors and is called *kupa* by the Indians. Turtle or tortoise shell, manatee bone, clay seeds, and even heavy wood are also employed occasionally for this purpose. The shape of the whorl varies considerably; most commonly it is of conical form. The largest diameter varies from 1 to 1½ inches, and the height from three-quarters of an inch to 1 inch.

Spinning.—A very curious method is used to spin (M.: *blakaya, bitikaya;* T. and P.: *wâinin, wâinini;* U.: *tâihnaka*). A cotton thread, drawn by the left hand of the operator from a pile which she is holding in her lap, is attached to the spindle a little above the whorl. The spindle is placed in a calabash and is made to revolve very rapidly by means of the thumb and forefinger of the right hand. With each twirling movement the spindle is kept in rotation for about half a minute by the momentum of the whorl, during which time the operator is continually drawing out cotton thread, which is then wound on the spindle. This process is repeated until the spindle is full.

Weaving.—The cotton thread is woven (M.: *lukaya;* T.: *kilnin;* P.: *anini;* U.: *dahnaka*) on a horizontal loom (M.: *slabin;* S.: *slabin, silamba*) of most simple construction and similar to the one shown on the Mexican Codices, and still used by the Maya and other Central American tribes. It consists of a cloth beam and a yarn beam, which are connected to each other by the warp. The yarn beam is attached to a house post, about 6 feet from the ground, while the cloth beam is attached round the back of the weaver by a thick cord, enabling her to tighten the warp at will by merely leaning backward. The completed material is rolled up at the lower end. Looms of similar technique are also found in South America and Oceania.

[27] Cf. Mexican malacatl.

1: Conzemius M-4, 5 (1921) 1932
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OTHER HANDICRAFTS

283 BARK FIBERS.—From various trees known locally as "mahoe" or "majagua" (M. and S.: *sani*, *wahpi*, *wahmatis*, *tâitu*) the Indians obtain strong bark fiber (M.: *sani;* S.: *wahso*). The best fiber from these trees is pulled off, split, cut into many threads of the desired size and made into ropes and cordage, hammocks (M.: *silmika;* S.: *wah*), matates or carrying bags (M.: *kūa;* T., P.: *wili;* U.: *wali*). These articles are colored with native bark dyes. The carrying bags are of various sizes and consist of coiled work without foundation; they are furnished with a head strap woven of one piece with the bag.

Bast fiber is also the common tying material of the Indians, and a supply thereof may always be found in the huts. It is also used as pack straps, which are put around the forehead and support the load carried on the back.

PITA FIBER.—Pita or silk-grass fiber (M.: *kara;* S.: *awa*) is employed for similar uses as bast fiber, and the articles made from it are practically indestructible. It is also made into fishlines, fish nets, and bowstrings, and used to repair shoes. Its extraction is very laborious. The pulpy covering surrounding the fibers is removed by scraping the surface of the leaf on a flat board with the aid of a machete or heavy iron knife. The fibers, which are thereby exposed, are then loosened and easily pulled from their bed by rubbing them crosswise of the leaf with the leaf pressed down upon the flat board. They are then washed to remove any adhesive pulp, dried, and rolled on the thigh into twine.

285 BASKETRY.—Basketry is not highly developed, although in such a well-watered country as the Mosquito Coast there is no lack of palms, vines, creepers, and epiphytic plants which may be used in basketwork. Certain vines are used in tying material, especially in the construction of the dwellings. The carrying bag of bark fiber or pita fiber takes to a large extent the place of baskets. From *wari* withes is made a round basket (M. and S.: *uslun*, *usnuñ*), which is used to store calabashes and other small kitchen utensils. Other types made by the Sumu are called by these Indians *wah-tâina* and *sidan*. A large waterproof basket, known locally by the name *pataki*, is obtained in trade from the Black Carib; it is made from *siwa* withes.

281 177 LEATHER WORK.—The art of tanning has apparently been learned from the whites. The bark of numerous indigenous trees is used by the Indians for tanning purposes. Leather is used nowadays for drumheads, masquerade dresses, sandals, moccasins, crude saddles, and belts.

383 RUBBER INDUSTRY.—Some of the Indians have learned the process of hardening the milk of the rubber tree (*Castilla* sp.) by treating

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *punka*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsaŭ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (*f*, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (*a*, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaŭka*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

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them. White thread and small needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from Spanish "aguja") of foreign manufacture are employed to string the beads.

NAVIGATION AND CANOE MAKING

Travel is effected chiefly by canoe, for there are hardly any roads in the country outside of the hunting trails; the numerous navigable rivers intersecting the country form, together with the lagoons and the sea, the means of communication.

The Miskito inhabiting the immediate seashore from Cabo Gracias a Dios on southward are excellent seamen; they were already noted for their courage on the sea by the buccaneers (Raveneau de Lussan: 440). The Miskito living to the north of that settlement, however, navigate the lagoons and rivers, and rarely venture on the sea. The Indians living inland, on the other hand, are afraid of the sea and of the large lagoons, but they are perfectly at home in the bush, and they are very expert in navigating the river boats through the dangerous falls and rapids.

BRIDGES.—The liana bridges, which are met with in other parts of Central America, are unknown on the Mosquito Coast. The Miskito and Sumu occasionally make a crude bridge over a narrow creek by felling a tree across it. Canoes are used everywhere for the crossing of the streams.

TYPES OF CANOES.—Two sorts of dugout canoes are used on the Mosquito Coast. The "dori," or keeled canoe, is used to navigate the sea and lagoons, while the "pitpan," or flat-bottomed canoe, is employed on the rivers. The sea canoes are fast sailors, but somewhat "cranky." All these boats are hollowed out by means of the adze; the largest specimens, cut out of the solid tree, without any addition, may reach up to 5 feet beam and 40 feet in length.

PITPAN.—The "pitpan" is a long narrow boat with flat bottom, drawing but little water; it is therefore particularly fitted to navigate the shallow creeks of the interior which abound in rapids and falls. It glides noiselessly over the water and is easily steered, but it is very cranky and the slightest motion renders it liable to upset. It is therefore of no use on the sea. The pitpan has a square projecting bow and stern, like a small platform, large enough for a person to stand on. A hole is made in the bow through which a pole is thrust perpendicularly in the ground, to moor at river banks or at shoals. The pitpan is very thick bottomed, and for that reason may sustain very rough handling in hauling it over the rocks at rapids and falls.

The name "pitpan," which is in general use among the English-speaking population of eastern Central America, is taken from the Miskito word *pitban*, which means plaited. It is claimed by some

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DECORATED CALABASH VESSELS
Sulma of upper Rio Grande.

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[p. 54 A]

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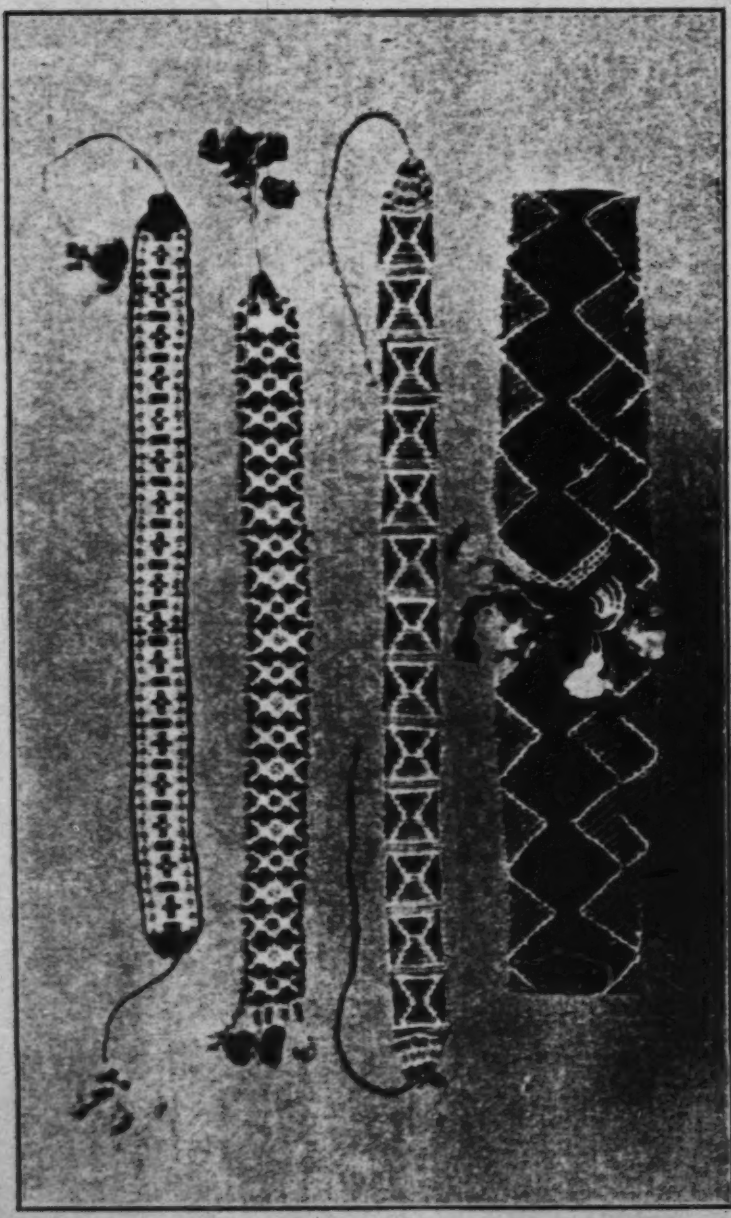

BEADWORK
Miskito and Sumu of Rio Coco.

[P. 54 B]

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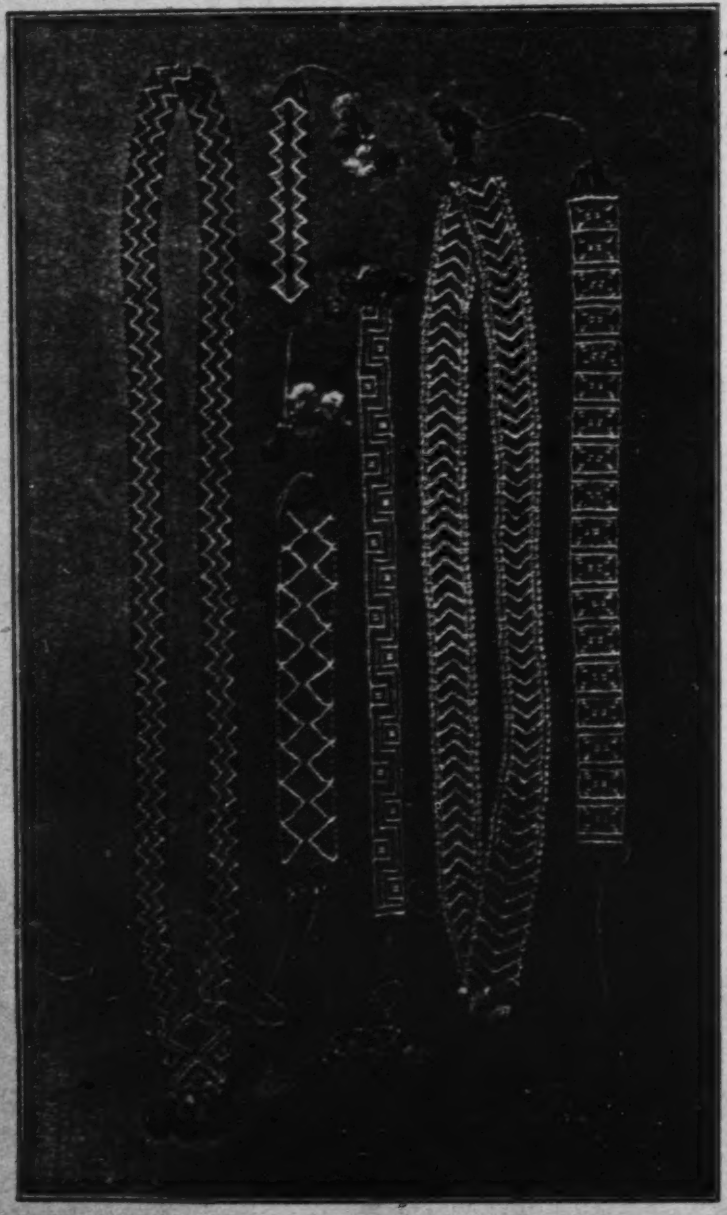

BEADWORK
Miskito and Sumu of Rio Coco.

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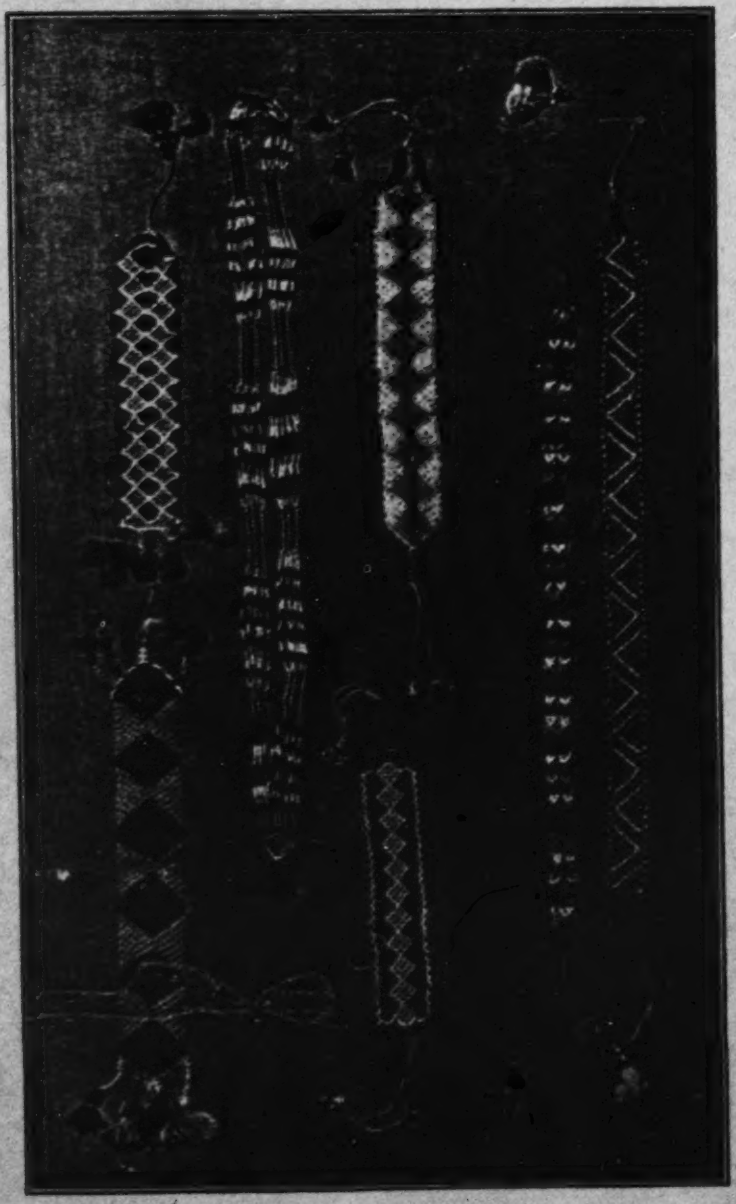

BEADWORK
Miskito and Sumu of Rio Coco

[p. 54 D]

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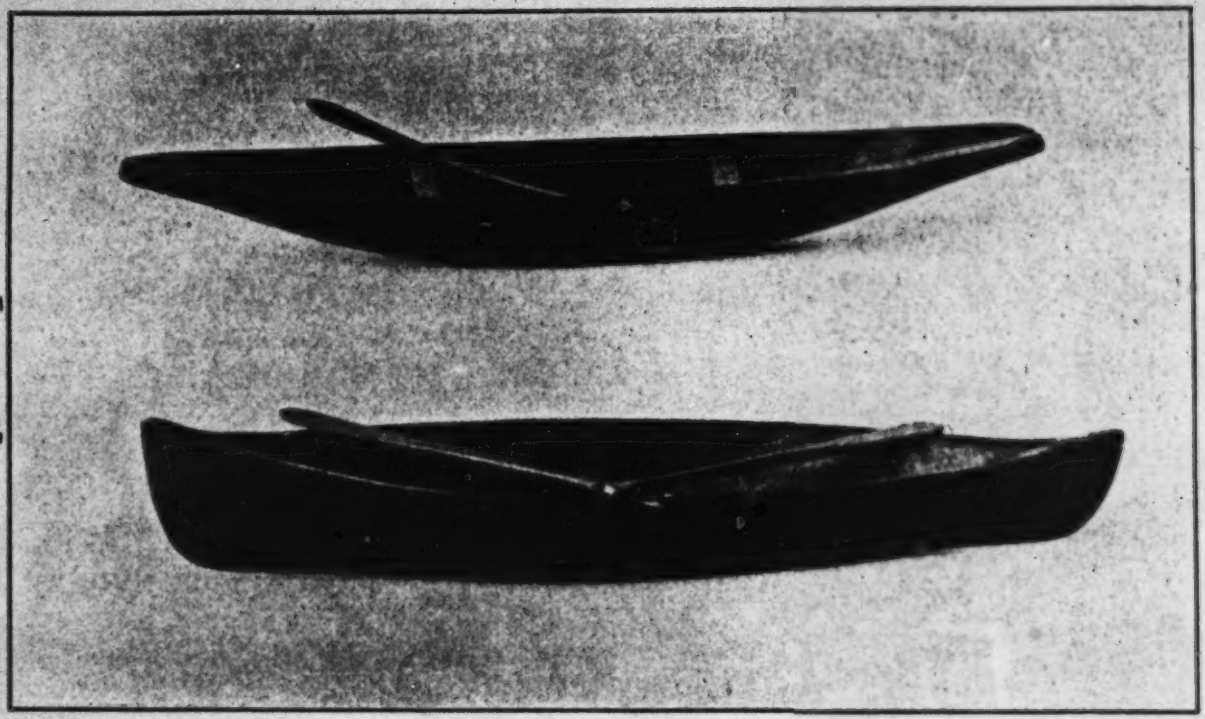

UPPER, MODEL OF "PITPAH," A FLAT-BOTTOMED CANOE FOR RIVER NAVIGATION; LOWER, MODEL OF "DORI," A KEELED CANOE FOR SEA AND LAGOON NAVIGATION

Sumu of lower Rio Escondido.

[p. 54 E]

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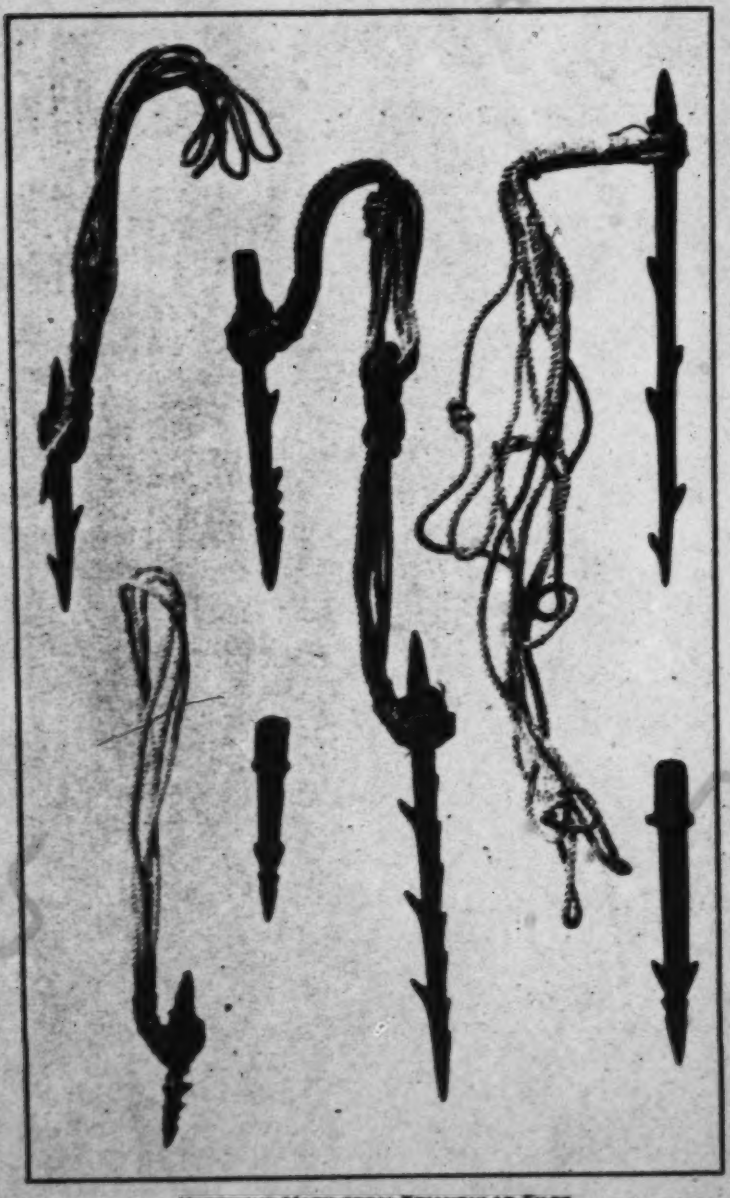

HARPOONS MADE FROM TRIANGULAR FILES
Mexico.

[P. 54 F]

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that in former days the Miskito made rude canoes of plaited withes and made them waterproof by smearing a thin layer of clay over them. The Ladinos have corrupted the name into "pipante." The Miskito of the upper Rio Coco, who know no other boat but the pitpan, apply the name *dori* or *duri* nowadays to a keeled or unkeeled canoe, but among their kindred living near the sea this word is restricted to the former type. In all Sumu dialects both types are called *kuriñ*.

Bateau.—A large form of pitpan, known by the French name "bateau," is generally used to transport cargo on the rivers of the Mosquito Coast. It is made by enlarging an ordinary pitpan. The latter is cut lengthwise in two halves of equal size; boards are then inserted, and the two parts are joined again. The sides are also raised. Such bateaux are generally manned by six paddlers and take about 5,000 pounds of freight. On some of the larger rivers there are operating some bateaux measuring up to 60 feet in length, 4 to 6 feet in width, and taking up to 100 Spanish quintals (say, 4,600 kg., or 10,145 English pounds) of merchandise. These are manned by from 10 to 12 Indians. A small cabin or "carroza" for the passengers is made immediately in front of the captain's seat, who steers the boat from the stern with the aid of a gigantic paddle. Such a cabin may be made of canvas cloth or merely of bamboo and large leaves; it affords protection from rain and sunshine.

Making of a dugout.—The manner of cutting trees and hollowing them out in former days was evidently that practiced in other parts of the New World before the arrival of the Spaniards. A ring was made with the stone ax through the bark and base of the tree, thus causing it to dry. Then fire was applied, and the wood was cut away as it charred. This process was repeated until finally the tree was felled. The hollowing out of the stem was also effected by alternately applying fire and the stone ax. Water was always kept at hand in order to quench the fire so as not to waste more wood than was necessary.

The width of a dugout is enlarged after it has been filled with water during a number of days; it may then easily be stretched and widened by inserting sticks. In former days rough dugout canoes used to be furnished by some of the Sumu tribes as a sort of tribute to the King of the Miskito.

Trees used in canoe making.—Following is a list of the various trees which are made into canoes by the Indians under consideration:

Mahogany (M. and S.: *yulu*; *Swietenia macrophylla* King) is the tree most commonly used, as it is very abundant on the Mosquito Coast; canoes from this wood are very durable, but rather heavy, and they are often attacked by boring worms.

Cedar (M.: *yalam*, *wiñkur*; S.: *suhun*, *wiñkur*; *Cedrela* sp.). Canoes hollowed out from this tree are very light and comparatively du-

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396 rable; the wood splits easily, but it has the advantage of not being
824 subject to the attack of worms.

The guanacaste tree (M. and S.: *tuburus; Enterolobium cyclocarpum* Griseb.) is the one preferred by the Black Carib for the making of canoes; they allow the tree to "season" on the ground for a few months before starting to hollow it out. The wood is as light as cedar.

From the silk cotton tree (M.: *sirin;* S.: *panya, paniki; Ceiba pentandra* Gaertn.) very large dugouts may be made, but its light, whitish wood is not durable. Owing to certain superstitions regarding this tree, it is rarely used in boat making. (See Religion, etc.)

Sabu (M.: *swa;* S.: *saba; Carapa guianensis* Aubl. or *Guarea caoba* C. DC.). The wood from this tree can scarcely be distinguished from mahogany in color and general appearance, but it is less durable.

Santa Maria (M. and S.: *krasa; Calophyllum brasiliense* var.) is seldom used, and it is suitable only for small canoes, as the tree does not attain such a great size as the aforementioned varieties. The wood is very durable, but it is rather heavy.

Emery (*Vochysia hondurensis* Sprague) is occasionally made into dugouts in the southern section of the Mosquito Coast. The wood resembles that of the silk cotton, but it is more lasting. It has, however, the disadvantage of soon becoming water-logged; besides, it rots immediately where a nail has been driven in.

The banak or cebo tree (M. and S.: *banak; Virola merendonis* ?) is a large tree which is also occasionally made into canoes.

501 CANOE POLES.—Canoes are propelled by long poles or by paddles. The poles (M.: *kahra, kahara;* T.: *kaha pan;* P.: *kaha pana, kuriñ pana;* U.: *pan sañ*) are used in shallow water with rapid current and hard bottom. In a small "cranky" pitpan this method of travel is not agreeable, especially to a newcomer; each time the boatmen, who stand up at the bow, push with their poles, the canoe begins to lurch as if it was going to upset. The captain sits at the stern and steers with a paddle.

PADDLES.—The paddles (M.: *kwaki;* T. and P.: *kawdi;* U.: *wdihna*) are broad bladed and made generally of mahogany or cedar. They measure from 4 to 5 feet in length and are often roughly polished. Larger paddles are also used, especially by the steersman, for the propelling of the bateaux. At its upper extremity the paddle terminates into an enlargement or "ear" (M.: *kyama;* S.: *tapani, tapaka*), which serves as grip to one hand, while the other hand grasps the paddle about 2 feet farther down. The paddles are moved vertically along the gunwale of the boat, the blade forcing back the water with main strength applied and very quick strokes.

SAILS.—In former days the Miskito are known to have employed sails (M.: *kwaltara;* T., P.: *asna nokni;* U.: *asna nohka*[38]) of native

[38] These names literally mean "large cloth."

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cotton, but this manner of facilitating navigation may have been of European introduction. To-day the Indians make sails from canvas or other imported cloth, and employ them on the sea, lagoons, and the larger rivers.

RAFTS.—In descending the rivers the Indians also make use of rafts (M.: *puhlak;* T., P.: *pala, dana;* U.: *lim*). They are made by tying a number of balsa stems or other light wood together with the aid of lianas or vegetable fibers. For lack of other light woods at hand, banana stems are sometimes used for this purpose, but these soon become water-logged. The stems are generally half submerged, but on large balsa rafts the natives descend from the interior with heavy cargoes of merchandise or livestock.

SKILL AND ENDURANCE OF THE INDIAN BOATMEN.—Both Miskito and Sumu are remarkable for their skill and endurance as boatmen. They work in a rhythm, and at each thrust all the paddles lightly strike the gunwale of the canoe together. From time to time, at a sign of the bowman, all the paddles are lashed simultaneously with the flat part of the blade upon the surface of the water.

The river Indians of the interior are very skillful in the management of the canoes through the falls and rapids of the streams. When proceeding upstream the boat is generally hauled through a side channel, or overland with the aid of strong withes or lianas [29] which are fastened to the hole in the bow. But a greater danger consists in "shooting" the rapids, the canoe rushing with great speed down the crooked channel oversown with projecting rocks. One Indian stands in the bow with a pole balanced in the middle, with which he touches the rocks scattered in the river, in order to guide the dashing pitpan and ward it off from these dangers. Every one is silent and watchful except for the short, sharp words of direction from the bowman to the captain, who is at the stern and assists with the timely stroke of the paddle. If the canoe gets swamped, the Indians jump overboard and, hanging on to it with one hand, they bail out the water with the aid of a calabash.

DOMESTICATION OF ANIMALS AND BIRDS

INDIGENOUS ANIMALS.—Many indigenous animals are tamed to keep as pets. Of these the most frequently seen are the capuchin or white-faced monkey (*Cebus* sp.), the spider monkey (*Ateles* sp.), the howling monkey (*Alouatta* sp., syn. *Mycetes* sp.), paca (*Cuniculus*

[29] Many trees are covered with such parasitic vines or lianas which climb up the stem to the branches, from which they hang freely down like ropes in sizes from very thin ones to others measuring up to 2 and even 3 inches in diameter. They are stronger than string or rope and resist the influence of the climate much better.

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231 sp.), agouti (*Dasyprocta* sp.), deer (*Odocoilus* sp. and *Mazama* sp.), squash or coati (*Nasua narica*), and raccoon (*Procyon lotor*).

Wickham (b: 163; c: 200) even saw a tame otter among the Ulwa of Rio Escondido. The Indian women have great patience in taming young animals and they will suckle them as they would their own children. These animals are generally caught while still very young.

INDIGENOUS BIRDS.—The domestic turkey is now found in almost every hut. Among the other native birds which are usually tamed by the Indians are the following: curassow (*Crax* sp.), guan (*Penelope* sp.), mountain hen (*Tinamus* sp.), muscovy duck (*Cairina moschata*), macaw (*Ara* sp.), parrot (*Chrysotis* sp.), parrakeet (*Conurus* sp.), toucan (*Rhamphastos* sp. and *Pteroglossus* sp.).

The birds are taken out of the nest while still young, but old birds are occasionally tamed. When slightly wounded or when shot with a blunt arrow they are carried home and kept for a few days without any food. After that they become generally very docile and are ready to eat the food given to them.

231 NATIVE BEES.—Various species of the native stingless bees are
263 occasionally found in a semidomesticated state around the Indian huts. About a dozen species are found in the country, all belonging to the family of the Meliponidae. The largest of them is about the size of the European bee. The honey cells are circular and the honey is yellow and slightly acidulous in taste; it does not crystallize when kept for some time, as is the case with that of the European bee. It is slightly laxative and is generally diluted with water, either fresh or after having been allowed to ferment. Previous to the introduction of sugar-cane, honey was used to sweeten food. The wax, which is
231 light brown in color, is used as "cement" in the making of arrows, spears, and other implements; in certain regions it is also used for
222 lighting purposes. The Indians also collect the honey from the bee nests in the forests and store it in large bamboo joints.

231 DOMESTIC ANIMALS OF FOREIGN ORIGIN.—The most common domes-
177 tic animals are the dog, pig, cattle, and fowl, while the horse, cat, goat, and sheep are rarely seen. All these animals are of foreign origin and have been introduced from the interior of Honduras and Nicaragua. Among the Indians they are known almost invariably by their Spanish or English name.[a] When the Indian family travels all the livestock is taken along.

231 CATTLE.—Cows (M.: *bip*, from the English "beef"; S.: *toro*, from the Spanish *toro* "bull") are owned by many Indians, especially those living in the savannas. They feed on the coarse grass, there being no artificial pastures made by the Indians. The cows are rarely

[a] The Ulwa, however, call the cow and the horse by the native names they apply to deer (sena) and tapir (pawka), as do a number of other tribes in Central and South America.

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milked, their owners being unwilling to "rob" the calf, but the meat is esteemed.

HORSES.—Horses (M.: *aras*, from the English "horse") are not common, while mules and donkeys are conspicuous by their absence. The horse is sometimes used as a riding animal by the savanna Indians, but loads are transported either by canoe or on man's back. The Indians ride bareback and use a sort of bridle consisting of a rope made from bark fiber, which is tied loosely round the lower jaw, leaving two ends for reins. When swimming the horse in deep water, the rider gets off its back, at the upside in case of a running stream, and swims beside the animal, holding on by its mane. As soon as the horse touches bottom he gets on again. The manner employed in breaking a young horse is very simple. One man leads it with a rope into the water, to a depth of 3 or 4 feet. Then another man quickly jumps upon its back, whereupon the frightened animal begins to buck and skit. After a while it is completely exhausted and docile.

PIGS.—Pigs (M. and T.: *kwirku*, from the Spanish "puerco"; P. and U.: *kusi*, from the local Spanish "cuche") were already found occasionally among the Miskito at the end of the seventeenth century (M. W.: 310). Pork is rarely eaten by the Indians, and fattened hogs are sold to the foreigners and Ladinos. Little care is given to these animals; they are left to roam around and find a large part of their food themselves. At night they are kept in a pen adjoining the dwelling, or they are brought inside and tied to a post on account of the various felines preying upon them.

FOWL.—The domestic fowl (M.: *kuila*, from the Spanish "gallina") is found in every house. It is esteemed chiefly on account of the crowing power of the cock, which serves as a clock at night. The Miskito had already some fowls at the end of the seventeenth century (M. W.: 310). Among the Sumu this bird is called *sabara* and *kutarama*; these appear to be onomatopoeic names, and similar terms are met with in other parts of Central and South America.

DOGS.—In every Indian dwelling there roam about some sneaky, repulsive curs, ready to steal if they are left unwatched for an instant. They are kept as pets, as watch dogs, but above all, for the chase. Good hunting dogs, especially such as are trained to hunt the jaguar or the puma, are very highly valued. The Indians feed them but little, fearing that they will lose all interest in hunting. The dogs are therefore very lean and the bones of the long, thin body generally appear distinctly beneath the skin. They roam about the house during the night and make their lair at the foot of that of their masters; they are responsible for the bloodthirsty fleas which abound in the Indian dwellings.

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According to Belt (204) the Sumu living on the upper Rio Grande used to come periodically to the Spanish settlements in order to obtain dogs. They would barter a gun or a large iron pot for a single dog, if it was of the right color. Some Ladinos around Olama had even in those days commenced to rear dogs to supply the demand. These Indians had a special liking for black ones, and did not value those of any other color so much. Lehmann (c: I, 405) states that the Miskito formerly buried a red dog (*pâsan*) with a dead person, in order to serve the latter on his voyage to the underworld. However, the writer has never observed that either Sumu or Miskito have a preference for a certain color.

There is no record of the former existence on the Mosquito Coast of the "xulo" (xolotl) or barkless dog, which was tamed in the Pacific region of Nicaragua at the time of the conquest. The native names of the common dog (M.: *yul;* S.: *sul, sulu, solo*) bear a close affinity to that Nahuatl word. Allen has identified the barkless dog in question with the raccoon, which is, however, called *suksuk* by both Miskito and Sumu.

AGRICULTURE

Agriculture is not as highly developed on the Mosquito Coast as in the remainder of Honduras and Nicaragua; it furnishes, nevertheless, the principal means of subsistence.

PREPARING THE PLANTATION.—In order to make their plantation (M.: *insla;* S.: *yamak*) the Indians cut down a patch of the forest, generally on the bank of a navigable stream. The rough work, that is the felling of the trees and the clearing of the ground, is essentially man's work. The large hardwood trees are usually left standing, but all the other giants of the forest are cut down. This work takes place at the beginning of the dry season, about February or March. Toward the beginning of May fire is set to the tangled mass. When the ground has thus been prepared by the men, the women take charge of the future plantation, the planting and cutting down of the grass and weeds being their occupation. Sometimes the man and wife do the planting together. The harvesting is the work of the females.

The ax, machete, and "barreta" or pointed digging stick are the only agricultural implements. The great heat and moisture with the comparatively uniform temperature all the year round enable a constant succession of vegetation, and trees may bear fruit at all seasons. The soil is in general very fertile, but large areas of the country are covered with savannas with sandy and gravelly soil, which is entirely unfit for cultivation and produces only scanty grass, pines, oaks, and various species of scrubby plants. The Indians from this part of the country are therefore compelled to make their planta-

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tions on the edge of the rivers, often at a considerable distance from their villages. 241

INFLUENCE OF CULTIVATION UPON THE FOREST.—The bush, which springs up again from the seeds of the forest trees germinating in the ground, is cut down from time to time. After two or three crops have been obtained from the plantation, a variety of weedy-looking shrubs and grass begins to get a hold upon the land. The plantation is then abandoned, as the Indian does not consider it worth while to undertake the great amount of labor needed to keep the ground clear. He prefers to prepare a new plantation (M.: *insla disañ;* S.: *yamak wiesm*) by cutting down another patch of the virgin forest, where he is sure of a better crop. 241 311

The brushwood springing up in the abandoned plantation (M.: *insla prata;* S.: *yamak ba*), being not interfered with any longer, gradually chokes off the grass and weeds. As a number of the larger hardwood trees had been left standing in the first place, such an abandoned plantation will, after 15 or 20 years, not differ essentially from the surrounding primeval forest. It may then be cut again for the making of a new plantation. As the country is sparsely inhabited, the Indians will always find virgin forest within close distance from their home; besides, many of them are seminomadic and change their village sites from time to time. Were they to make their plantations for a long-continued period on the same spot, cutting down the brushwood again and again, a great change would gradually take place. The soil not containing any more seeds of forest trees, grass and a scrubby vegetation would in time spring up. This may be observed around certain villages, where by this manner the forest has been beaten back, inch by inch, gradually but surely.

BANANAS AND PLANTAINS.—It is noteworthy that the most important food plant of the Sumu and of the Miskito living toward the interior, the banana (M.: *sikse;* S.: *wakisa, pasa, iñkini*), is not indigenous to America. It was apparently brought by the Spaniards from the Canary Islands during the early part of the discovery, first to Santo Domingo (Haiti), and from there to the mainland. According to the testimony of the buccaneers of the latter part of the seventeenth century, bananas and plantains were already cultivated in those days by the Miskito of Cabo Gracias a Dios. Raveneau de Lussan (429) saw in 1688 many bananas on the banks of Rio Coco, and states that they had been planted by the Albaotins (= Sumu) and by the river currents. He also found this plant cultivated by the Mulattoes living around Cabo Gracias a Dios (438). Dampier (I, 9–10) mentions plantains among the Miskito, but he does not say anything about bananas. Exquemelin (English edit.: 114, 251), on the other hand, who visited the coast in 1671 and 1672, saw bananas, plantains, and 246 [117]

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245 "racoven" [4] among this same tribe as well as among the Kukra of the Corn Islands. M. W. (302, 310) also refers to bananas and plantains among the plants cultivated by the Miskito.

There is a great variety of bananas and plantains grown by these Indians, but by far the most common is the so-called "Gros Michel" (also Jamaica, Martinique, Guadeloupe, or Bluefields), known to the Ladinos as "patriota" or "blanco"; this is the only variety entering largely into world trade. The Chinese or dwarf banana (*Musa chinensis* syn. *M. humilis* and *M. cavendishii*), which is the one grown in the Canary Islands for the European market, is also grown a little; this is the only species suitable for cultivation in the temperate zone and in the higher altitudes of the tropics. It is cultivated in Florida and in southern Louisiana, where it is called "horse banana." Various varieties of the plantain (M.: *plato*, from the Spanish "plátano"; S.: *waki; Musa paradisiaca normalis*) are also grown by both tribes. There are some native names for certain of the local varieties of the plantain and banana.

244 CASSAVA.—Sweet cassava (*Manihot palmata* Muell. or *M. aipi* Pohl; M.: *yauhra;* S.: *malai, maley*) is the staple food of the coastal Miskito; it is also cultivated by those living inland, and by the Sumu. This food plant was mentioned by Raveneau de Lussan (438), Exquemelin (Engl. ed.: 251), and M. W. (310). The bitter cassava (*Manihot utilissima* Pohl) is unknown to either Miskito or Sumu, but is largely cultivated in two different varieties by the Black Carib (Garif) and the Paya of Honduras, who eliminate the deadly hydrocyanic acid contained therein by ingenious methods.

EDDOES OR TANIAS.—This plant, which is known locally among the English-speaking population by the Jamaican name "coco" (*Xanthosoma sagittifolium* Schott; M.: *dusus;* S.: *wilis*), is also cultivated for its eatable tubers. It is of similar appearance and habits as the taro (*Colocasia* sp.), the staple food of the Pacific Islands.

SWEETPOTATOES.—There are several varieties of the sweetpotato (*Ipomoea batatas* Poir.; M.: *tauas;* S.: *poi*). This food plant has been met with by several authors of the seventeenth century among the Miskito of Cabo Gracias a Dios (Exquemelin, Engl. edit.: 251; Dampier: I, 9; M. W.: 310). It was also cultivated by the aborigines of the Corn Islands in those days (Exquemelin, Engl. edit.: 114).

[177] YAMS.—Several varieties of yams (*Dioscorea* sp.) are cultivated; they are of African origin and the Indians have no native name for

[4] This name is probably deformed from pacoba, bacove, bakaceba, or bacoven, names given to the banana in Brazil and in the Guianas. These words derive from pake or pakoba "banana" of the Tupi-Guarani linguistic stock. In the Spanish edition of Exquemelin's work (p. 433) the word is, in fact, spelled "bacoves." Cf. also Van Panhuys, Observations on the Name Bacova, Twenty-first International Congress of Americanists. Göteborg, 1925.

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them. There is, however, a semiwild growing variety of a purplish color, which is called *usi* by the Miskito and Sumu; this is probably the one mentioned by Dampier (I, 9) and M. W. (310). 244

OTHER VEGETABLES.—Pumpkins and squashes (*Cucurbita pepo* L.; M.: *ius;* S.: *ati*) are also grown to some extent, while the chayote or chocho (*Sechium edule* Sw.; M. and S.: *mukula*) and the tomato (*Lycopersicum esculentum* Mill.) are cultivated in a desultory way. The latter plant appears to be indigenous, but there is no native name for it.

MAIZE.—Maize or Indian corn (*Zea mays* L.; M.: *aya;* S.: *am, ama*), which forms the staple food practically all over Central America, is sparsely cultivated by the Miskito; however, it was already observed among them during the latter part of the seventeenth century by Ravenseau de Lussan (438) and by M. W. (308, 310). This food plant is more esteemed by the Sumu, especially by the Twahka and Ulwa, who grow an inferior quality of inbred maize. It is stored by hanging it under the roof over the smoke in order to prevent molding. 243 [251]

BEANS.—The red or black beans (*Phaseolus vulgaris* L.), which rank as a staple food in large areas of northern and western Central America, are grown to a very small extent by either Miskito or Sumu. The red variety is the one usually found; it is somewhat smaller than the red kidney bean of the United States. Both tribes have a native name (M.: *snak, snik;* S.: *sinak*) for the plant; as these designations are also applied to a wild-growing vine, bearing small beanlike fruits, it is very probable that beans have been introduced only in recent times. In fact, this food plant is not mentioned by any one of the seventeenth century authors. 244

RICE.—Rice (*Oryza sativa* L.) is rarely cultivated and has been introduced recently; it is known by its English or Spanish name. The grain is heavy and rounded, and it differs considerably from the native wild rice of tropical America (*Zizania* sp.), with long, narrow, dark grain. 243

PEJIVALLE PALM.—The pejivalle or pijibay palm (*Guilielma utilis* Oerst.; M. and S.: *supa*) is cultivated for its edible fruit all over the Mosquito Coast, usually around the Indian huts. The Central American name for this plant appears to have been taken from the Arawak language of Haiti. The palm is probably of South American origin and is extensively cultivated in the tropical part of that continent. It is there known by a great variety of names, of which the following are the best known: Gachipáez, cachipaes or cachipay (Colombia), chonta[a] (Ecuador), piritu, prijao (Venezuela), pupunha (Brazil), paripu, paripi and peach palm (Guianas). 245

[a] From the Quichua *chontaórru* or *chontadura*.

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On the Atlantic slope of Central America this palm is grown as far north as Rio Tinto in Honduras, but on the Pacific side its northern limit is formed by Lake Nicaragua. It is found only in the cultivated state; the palms found occasionally in deserted regions indicate former village sites. A wild variety, bearing inedible small fruits, is found on the Mosquito Coast to the south of Bluefields; it is there known as "pejivalle de monte" or "wild supa."

COCONUT PALM.—The coconut palm (*Cocos nucifera* L.), called *kuku* by both tribes, is found in a semiwild state all along the seashore; some of the inland Indians have also planted a few trees. This palm is not mentioned by the buccaneers who visited the Mosquito Coast, as Exquemelin, Dampier, and Raveneau de Lussan; it was met, however, by M. W. (310). The Indians make little use of the coconut, except that they drink the water and eat the tender kernel of the young nut; very few of them extract the oil from it, as do the Creoles and Black Caribs.

SUGARCANE.—Sugarcane (*Saccharum officinarum* L.; M.: *kayu*, from the Spanish "caña"; S.: *tisnak*) was brought by the Spaniards during the early part of the sixteenth century to the New World, first to the West Indies and later to the mainland.[a] The various buccaneer authors do not say anything of its occurrence among the Miskito. The first mention of this plant on the Mosquito Coast is found by M. W. (310), who states that the Miskito King Jeremy had some in his plantation, but in those days (1699) the Indians did not yet know how to make sugar from the juice. Nowadays they drink the juice of this plant, after having allowed it to ferment; they also boil it into sirup and brown sugar.

CACAO.—Although an indigenous tree, cacao (*Theobroma cacao* L.; M. and S.: *kakau*) is cultivated only by the Ulwa, but in former days it was also grown by the Miskito (M. W.: 308, 310). The Indians also collect the pods from the various varieties of cacao trees which grow wild in shady parts of the forest.

Cacao pataste or "werbra cacao" (*Theobroma bicolor* Humb. and Bonpl.; M.: *wruñ*; S.: *kuru*) is cultivated, however, in the neighborhood of the huts.

CACTUS.—Sloane (a: p. LXXVIII) reports that the Miskito cultivated the Opuntia cactus for the breeding of the cochineal insect; this must be a mistake, however, for that industry was limited to the Indian tribes of the Pacific slope and of the interior, particularly in Mexico, Guatemala, Salvador, and Honduras.

FRUIT TREES.—The most common of the indigenous fruit trees, outside of the ones enumerated above, are the following: Pineapples

[a] Hernán Cortés, the great conquistador of Mexico, introduced the plant from Haiti into Honduras (Trujillo) as early as 1526.

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(*Ananas sativus*; M.: *pihto*; S.: *masa*, *masahti*),[4] papaws or papayas (*Carica papaya* L.; M.: *twas*, *tawas*; S.: *ulmak*, *ulumak*), avocados or alligator pears (*Persea gratissima* Gaertn.; M.: *sikya*; S.: *sikya*, *sarik*), soursops (*Anona muricata* L.; M.: *dwaraap*; S.: *aspot*), guavas (*Psidium guajava* L.; M.: *sikra*; S.: *burimak*), cashews (*Anacardium occidentale* L.; M. and S.: *kasau*), and watermelons (*Citrullus vulgaris* Schrad.; M. and S.: *rayapias*). Spanish plums (*Spondias purpurea* L.), although apparently indigenous, are rarely found, and their Indian name *plems* comes from the English language.

The most important fruit trees of foreign origin are: Citrus fruits (oranges, lemons, sweet limes, sour limes, shaddocks, grapefruits, citrons), mangoes (*Mangifera indica* L.), breadfruits (*Artocarpus communis* syn. *incisa*), tamarinds (*Tamarindus indica* L.), and rose apples (*Eugenia jambos* L.).

GARDENS.—Around their houses many Indians cultivate also a few fruit trees and other plants. The calabash tree (*Crescentia cujete* L.; M.: *kahmi*; S.: *sutak*) is very common in these gardens; it is esteemed for the very useful kitchen receptacles obtained from its fruit. A few bushes of cotton (*Gossypium peruvianum* Cav.; M.: *wahmak*; S.: *wahmak*), chile peppers (*Capsicum* sp.; M.: *kuma*; S.: *asmak*, *afimak*) and annatto (*Bixa orellana* L.; M.: *aulala*, *tmarik*; S.: *awal*) are found near every lodge. A number of flowers are also cultivated, as the African marigolds, purple and white four-o'clocks, and the crimson hibiscus.

FISHING AND FISHING IMPLEMENTS

A very large share of the food supply of these primitive Indians is obtained from the sea, the lagoons, and the rivers. Fishing is therefore an occupation wherein both tribes have attained an unusual degree of skill. The main implements used for this purpose are harpoons, fishhooks, nets, and bows and arrows.

JAVELIN.—The javelin or throwing spear (M.: *wisiku*; S.: *sukruk*) is used in the sea, lagoons, and larger rivers. It consists of a wooden staff, from 8 to 9 feet in length, in the front end of which a sharp barbed steel head has been inserted. The staff is of strong, slender, light wood, generally of a tree called "magaleta" (M.: *sihnak*, *sinak*; S.: *sina*); the Ulwa, however, use for this purpose the wood of a tree called by them *pan-kubo*, which is said to be superior to the above-mentioned species. The loosely fitting steel point is from 4 to 5 inches long and is made of an old file, wherein several series of double

[4] The old authors, Exquemelin (Engl. edit.: 251), Dampier (I, 9), and M. W. (308, 316), met this fruit among the Miskito during the latter part of the seventeenth century; in those days it was also cultivated by the aborigines of the Corn Islands (Exquemelin, Engl. edit.: 114).

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411 barbs have been made with the aid of another file. Previous to the introduction of iron and steel the Indians made their spear points of pointed and barbed pieces of bamboo. A cord about 50 feet in length is attached to the point, while the other end of it is wound round a long reel of light wood, which acts as a "bob" or float, and is stuck at the distal end of the staff. These Indians call the float *kunkun*, which name is also applied by the Sumu to the balsa tree (*Ochroma lagopus* Sw.), from which it is usually made. Sometimes the red cedar (*Cedrela* sp.) or the roots of the "bobwood" tree (*Anona palustris*) are employed for this purpose by the Miskito.

The javelin is used only for the larger fishes, such as the carplike snook (M. and S.: *mopi*) and the salmonlike tarpon (M. and S.: *tapam, takpam*) which are frequently met with in the larger rivers.

226 Two men generally work together when fishing with this implement. The one in the bow of the boat signals his companion how to steer by motioning with the hand. They glide noiselessly over the water, and when within reach of a fish, that is, about 60 feet distant from it, the bowman stands up with the spear in his right hand and aims and throws at a single fish, which he may be unable to see through the thickness of water. The only thing visible is the fish's "wake," that is, the ripple produced on the surface of the water as he swims lazily along. By that the Indian guesses the species of the fish as well as the depth at which he swims under water. It may be 2 feet. The spear is thrown in such a manner that it strikes the water almost vertically; the Indians seldom miss, for they have practiced this sport from early childhood. Upon striking the fish, the cord unwinds; harpoon and reel become detached from the staff, but they are attached to each other by the cord. The reel acts like a float and points out the whereabouts of the prize; with its aid the latter is secured. When the fish is tired, it is drawn near the canoe, killed with a stick, and hauled in. Then the staff, which is also of floatable wood, is likewise caught.

At the beginning of the rainy season the Miskito also practice this sport at night, especially in the lagoons. At such places where the fresh water comes in contact with the sea water it blazes as the fish swims along, thus indicating the latter's presence.

On dark nights the fish is also speared with the aid of a pitch-pine torch which is held by a third man in the boat. The glare of the torch attracts the fish and enables the bowman to spy his prey, which is immediately transfixed by the harpoon. This sport of fishing with a torch is practiced chiefly in November and December.

[171] The Sumu seldom employ this fishing implement as it is of little use in the small rocky streams where the bulk of this tribe lives. On the other hand, many Creoles and Ladinos living on the coast have learned from the Indians how to handle it.

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MANATEE SPEARING.—A similar spear, but with a point having not more than 2 inches in length and provided with only one or two barbs, is used to catch the manatee or sea cow (*Trichechus* sp.). The staff and float are identical as in the fish spear, but the line is thicker and stronger, for the manatee is a large and powerful animal. Dampier (I, 35–36) gives an account of the method practiced by the Miskito to secure this large mammal; it is still done so in our days. The Indians go after the manatee during the early morning when it grazes on the banks of the rivers and lagoons. The canoe is sometimes covered with branches or bushes, giving the appearance of a floating tree or island. When speared, the manatee makes off at a great speed, followed by the Indians, who can ascertain the direction which it takes from the float rippling the surface of the water. They manage to seize the latter and tie the distal end of the line to the bow of the boat. Gradually they advance toward the animal, hauling in the cord as they proceed. But the victim, seeing or hearing the craft, makes away a second time, dragging behind it the canoe with the Indians, at no little risk to the latter. Sometimes a second harpoon is driven into it. Finally the manatee is totally exhausted; the Indians then approach and kill it with their machetes or with sticks and then haul it into their small craft. As the manatee may weigh from 500 to 600 pounds, this is no easy matter. Both Indians get in the water and, holding onto the sides of their boat, they tilt it over so as to swamp it, whereupon they push it under their prize. Then the water is quickly bailed out of the canoe with the aid of a large calabash and the craft gradually rises. When all the water has been bailed out both men get in again and triumphantly paddle home.

TURTLE SPEARING.—The harpoon (*silak*) used for spearing turtle is not provided with a float, but it has a cord measuring up to 30 fathoms in length, the distal end of which is attached to the bow of the boat. The shaft or staff is of pejivalle wood, or of some wild species of palm, known by the Miskito names *apo* and *rawwa;* the cord is tied firmly to it, for it does not float. This staff is from 2 to 3 inches thick and tapers gradually to a point at the rear end. An iron or steel point is inserted in the other extremity and an iron band is fitted around, in order to prevent the wood from splitting upon striking the turtle, for the harpoon is thown with great force. The point or head, locally called "peg" (*silak*), is triangular in section; it is single barbed at each one of the three lateral edges. Its length is only from 1½ to 2 inches, which fact enables it to get a good hold on the hard carapace of the turtle and at the same time not enter far enough to kill it. The Indians endeavor to approach either behind or directly in front of the turtle, as it does not see well straight ahead. When it comes to the surface to breathe, which takes place at intervals of about 20 minutes, the spear is thrown into the air in such a

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225 manner as to fall vertically onto and thus pierce the tough shell of the turtle. If thrown obliquely it would glance off the smooth carapace. Upon being struck the turtle disappears in the water, dragging the long line with the boat along, but after a while it becomes exhausted by its struggle. The boat is swamped and placed under the turtle to haul it in, for the latter may weigh up to several hundred pounds. By shoving the canoe from one side to the other the Indians throw out enough water to allow it to float, while the remainder is bailed out with a calabash. After the extraction of the harpoon head, the wound is stopped with cloth; otherwise the turtle may die. These animals are also harpooned at night, their presence being indicated by the line of phosphorescent light they produce in the water. A smaller implement is employed for young sea turtles and for the different smaller varieties met with in the rivers.

TURTLE NETS.—The Miskito of Tasbapauni (Pearl Lagoon) also employ large turtle nets, from 50 to 100 fathoms in length and from 6 to 8 feet in width, made of imported twine. These nets have been introduced into the country by the fishermen from the Cayman Islands and the Bay Islands. These turtle nets have very large meshes; they are anchored at the bottom and floated with buoys placed along the margin. Wooden turtle decoys are also attached to them in order to attract the prize, which becomes entangled therein and is then easily caught. Sometimes turtles die in the nets, being unable to rise to the surface to breathe.

OTHER METHODS OF CATCHING TURTLES.—Sea turtles are also caught at night by the Indians, when they come to the shore to dig a hole in the sand to deposit their eggs therein. They then carefully cover up the hole again, and occasionally even deposit some leaves or driftwood on the spot, so as to prevent detection. The Indians are very clever in discovering the eggs, being guided by indications on the surface sand. They poke suspected places with pointed sticks and by the moist particles adhering to the latter they immediately perceive when an egg has been pierced. Upon withdrawing the stick they examine and smell it, and having come to a satisfactory conclusion they turn up the sand. The Indian will also run after the turtle, overhaul it, and turn it on its back so as to render it helpless.

The green sea turtle (M.: *uli, lih;* S.: *wili*) is considered a great delicacy while the loggerhead and the hawk's-bill are also eaten. The latter species furnishes the valuable shell. Turtles are penned in [417] stockades or "crawls,"[46] made by driving heavy mangrove posts in the shallow sea water, until needed for food.

Several species of tortoises, of which the largest is the becatora (M.: *kuswa*[47]; S.: *kowa, kuwa*) are also greatly esteemed as food.

[46] From the Spanish corral, "cattle pen."
[47] M. W. (312) gives this name in the form *cushwow*.

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They are caught with the hook or by diving after them; some Indians will also catch the sea turtles in this manner and bring them up in their hands, but this feat is attended with danger, from bites and sharp coral. The bocatora tortoise is speckled black and yellow and is found in the larger rivers only. It lays about 20 round eggs in the sand, silt, or even in stiff earth; the eggs are inclosed in a rough calcareous parchment and are considered a great delicacy. 225

LANCES.—Two varieties of long spears, with fixed points, are employed for striking fish. They are not thrown, but kept in the hand while striking. These implements are found chiefly among the river Indians, Miskito as well as Sumu. The thin, strong staff, which may be from 10 to 15 feet in length, is made from the stem of a tree called by the Ladinos "cacao" (M.: *sakalpihni;* S.: *babasnak*). Of these two implements the more common one (M.: *sihnak;* S.: *suksuk*) has a harpoonlike point, similar to that of the javelin or throwing spear. The other one (M. and S.: *daka*) is provided with a pointed piece of thick wire or some other metal, which looks like a nail; for that reason it is called "clavo" by the Ladinos, who also use it in fishing. 411

FISHHOOKS.—Fishing with the hook (M.: *kyul;* T., P.: *kuyul;* U.: *simin*) is done chiefly by the women, children, and old men. The line is made of silk-grass fiber (*Bromelia* sp.) and is dyed black with vegetable juices, so as to render it less conspicuous. The hooks are of foreign manufacture but in former days crooked bones were used for the purpose. The Indians bait them with worms, spiders, grasshoppers, or fruits (guavas, wild figs). 227

At certain times of the year when the fruits of the wild fig or of other trees growing along the edge of the river begin to drop, the Indians fish without any bait at all. They flick and cast their long line about, lashing the surface of the water, and letting it sink, presently raising it with a peculiar movement of the wrist. This noise is regarded by the fish as resulting from the dropping of overhanging fruits and they will greedily snap after them and then be caught by the hook. 226

FISHING NETS.—A small fishing net (M.: *ilis, tan;* T.: *wilino;* P.: *ôua;* U.: *yano*), made of silk-grass fiber, is used by both Miskito and Sumu. With its aid they close the mouth of narrow creeks, in order to catch the fish trying to enter the main river. Wickham (b: 238; c: 203) already mentions the use of drag nets among the Ulwa of Rio Escondido; the Indians employed it in low water in the pools scattered among the bowlders or rocks in the rapids and falls. 227

The cast net and the seine have also been introduced recently among the Miskito. The former especially is becoming popular. Having the folded net in his hand, the Indian throws it like a lasso upon the water in such a manner that by a single cast it becomes suspended almost to its whole width, surprising and catching the

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227 fish on that spot; the presence of the latter is indicated to him from certain movements on the surface of the water. Lead balls or small round pebbles are attached to the edges of the net in order to keep it down in the water.

226 BOW AND ARROW.—Several river fishes, especially the short, deep, bluish-purple, perchlike species, which is known locally by the Miskito name *tuba* (S.: *pahwa*, *pahawa*, *pau*), are generally killed with bow and arrow. (See Hunting and Fighting Implements.) Two allied fishes, the moga (M. and S.: *moba*) and the guapote (M.: *sahsin*; S.: *musa*), are also killed in this manner.

The fishermen will sit entire hours at the waterside, keeping up continually a low, plaintive whistling, which is said to entice the fish within arrow shot. This requires great patience, a quality of which the Indian is not lacking, especially when it comes to hunting and fishing. The point of the arrow is held sometimes a foot deep in the water. At the approach of a fish the arrow goes off quick as lightning, and it rarely misses the mark. On account of its feather-light shaft it returns again to the surface and the fish is easily seized. This exercise is extremely difficult, as the true position of the fish is not the one in which it appears to sight, but it varies with the distance of the fish, with the latter's depth in the water, and upon the reflection of the light. In case the fisherman misses the arrow will return to the surface with the same degree as it had been shot down.

FISH "POISONING."—Fish are also caught by "poisoning" the water of small creeks. For this purpose the Indians utilize several vines, [278] especially *Seriania inebrians* (M.: *basala*; T., P.: *wana*; U.: *wahnari*); in Central America all of these varieties are known by the Quichua name "barbasco" or the Aztec "amol" (amolli). The vine is crushed with flat stones or wooden clubs, in order to release the poisonous milky juice. At a narrow part the creek has been barred by a sort of weir or fence made of sticks, stones, or branches in the form of an angle with the point in the middle of the stream. At some distance above this spot the crushed plant is thrown in the water, and the poisonous juice will spread and stupefy all the fish in the neighborhood. The latter then float on the surface and are carried down the stream, but they are intercepted by the weir, where they are caught by the Indians standing in the water and thrown on land. Larger fishes, which are not entirely powerless, are easily harpooned in this condition. By this method enormous quantities of fish may be obtained in a short time. The smaller fishes are allowed to float away and recover in the unadulterated water below. The juice of the "barbasco" is also poisonous to man, but it does not affect the taste of fish killed or stupefied with it. This manner of fishing is widespread in both Americas.

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DYNAMITING FISH.—Fish are also caught by exploding dynamite in the deeper holes and eddies of the rivers. This is practiced chiefly by the Indians living around the mining districts, where they can easily obtain sticks of dynamite. Several severe accidents have resulted among the Indians by this manner of fishing.

FISH POTS.—Fish pots (*pispat*) of cylindrical shape are also made by the Indians nowadays of split bamboo. They are of recent introduction and there is no native name for them. At one extremity this implement has a funnel-shaped opening. The apex of the funnel points toward the center of the trap, so that the fish can easily enter it, but is unable to get out again.

OTHER METHODS OF FISHING.—A very peculiar method of fishing is sometimes employed in order to catch certain species which have the habit of leaping out of the water when they believe themselves persecuted by other fishes. The Indians paddle slowly along the bank of the river, rocking the boat as violently as they can, at the same time making much noise by beating the bank with their paddles. The fish, leaping in terror out of the water, will fall in the canoe, and are killed immediately, so as to prevent them from escaping by another leap. This method was observed by Ferdinand Columbus in 1502 on the Atlantic coast of Panama; the natives used to catch in that way a small fish described as "pilchard." The canoe was provided with a screen erected longitudinally from bow to stern. The terrorized fish, upon leaping out of the water, struck against the screen and fell into the bottom of the canoe.

It happens not infrequently that, while rowing over shoals of fish after the breeding season, the stroke of the paddles may cause the fish to jump out of the water and land in the canoe. The common mullet, an excellent food fish, resembling the herring, which is found in large shoals in the lagoons and larger rivers, is easily caught during still, dark nights, by paddling noiselessly along and then suddenly striking the side of the boat violently with the paddle. A gigantic species of mullet, called *kukkals* by the Indians, likewise has the habit of jumping out of the water on hearing any sudden noise. This fish does not take the bait and readily jumps out of a net.

During the dry season fish are easily caught in the old river beds or lagoons, which may be found all along the larger rivers, for all these streams are changing their course constantly. During the rainy season the water from the main river flows in these lagoons, but in summer the reverse is the case. These old river beds are then the favorite fishing grounds of women and children. They dam up a shallow portion thereof and then bail out the water in order to seize the fishes caught therein. Should a cold rain occur during low water the temperature of these water sheets will be reduced considerably, relatively speaking, and many fishes die from exposure to the cold.

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226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with 225 the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

172 A small bivalve mollusk, known locally as "cockle" (M. and S.: ãki), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjökkenmödding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 FISHING CHARMS.—Certain charms are said to be very efficacious 777 at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *trisu*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

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411 language, and gives this name also as that of an island among the
278 Mosquito Keys.
171 The secretions from an indigenous pale greenish-blue frog (*Dendrobates tinctorius*) may also have been used as an arrow poison, as is done by several tribes of Colombia.

411 LANCES AND SPEARS.—Lances and spears, tipped with fishbones or with flint, were formerly used for hunting and fighting, but to-day they are employed exclusively in fishing. (See Fishing and Fishing Implements.) Ferdinand Columbus mentions these weapons and says that they were made of palm wood, black as coal and hard as horn, and pointed with the bones of fishes. The javelin or throwing spear is evidently the weapon mentioned in old Spanish documents under the name of "vara para tirar." According to Exquemelin (Engl. edit.: 114) lances of a fathom and a half in length and tipped with a crocodile tooth were one of the principal arms of the aborigines of the Corn Islands.

SLINGS.—Small slings (M.: *prûpruhkya*) for throwing stones are sometimes employed to kill birds.

CLUBS.—Wooden clubs (M.: *dyara prukaya;* T.: *di bûnin;* U.: *dibûnaka*) jagged with alligator teeth constituted a dangerous weapon in former days, but they disappeared many years ago.

BOW AND ARROW.—Bow and arrow appear to have been the principal weapon of the tribes under consideration; still they are said to have been unknown to the natives of the Corn Islands, who apparently belonged to the Kukra, a subtribe of the Sumu (Exquemelin, Engl. edit.: 114). It is known, however, that the Kukra living on the shores of Bluefields Lagoon possessed arrows, and a description thereof has been left to us by the same author, Exquemelin, whose vessel anchored at that lagoon in 1671. One morning several women slaves from this buccaneer vessel were attacked by a group of Indians and pierced by a great number of arrows. The latter were made of palm wood, 8 feet in length (5 to 6 feet according to the French edition), round in section and of the thickness of a thumb. They were tipped with sharp points of flint which were tied firmly into the arrow together with a wooden hook, so that the arrow point presented a harpoonlike appearance; the other extremity ended in a point. Other arrows had at the distal end a small wooden box, 1 foot long, filled with round pebbles, evidently in order to increase the power of the arrow. The Indians had been careful enough to put some leaves in this box in order to reduce the noise produced by the pebbles upon shooting the arrow off. Some of these arrows were painted red (Exquemelin, Engl. edit.: 247–248; Span. edit.: 446; French edit.: II, 257–258).

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There is no record of these Indians affixing feathers to their arrows, nor is there any other method known among them to guide their direction.

Nowadays the Miskito do not make use of bow and arrow, except for fishing. The elder Sumu still prefer these arms for hunting, as they do not make any noise and do not scare the game in the neighborhood as is the case with firearms. The lower end of the arrow is seized with the thumb and forefinger of the right hand, while the left hand is placed upon the bow and serves to direct the arrow and help in spanning the bow also.

Bow.—The bow (M.: *pantamaška;* T., P.: *las;* U.: *sibaŝ oka* "arrow house") is made of the hard wood of the pejivalle palm or of the cortes (*Tecoma chrysantha* DC.). It is roughly polished and flattened, with a rectangular or oblong cross section. It is widest in the center (about 1 inch) and becomes gradually narrower toward both extremities. It is of uniform thickness—that is, about a quarter of an inch—while the length varies from 4 to 5 feet. The bowstring (M.: *pantamaška awa;* T., P.: *las wahni;* U.: *sibaŝ wahka*), which is made of silk-grass fiber, is fastened to the tips at both extremities of the bow and is always kept rigid.

Arrows in general.—The arrow (M.: *trisba;* S.: *sibaŝ, sikarna*), like the bow, is made of the wood of the pejivalle palm. It is always round in section and of nearly uniform thickness; at the front end, however, it is gradually tapering and terminates in a point. The other extremity is inserted into a shaft of wild cane and firmly held in place with the aid of silk-grass fiber. In the distal end of the hollow shaft small pieces of wood are inserted, and then likewise some thread is wound round tightly in order to avoid splitting or any other damage liable to be caused by friction against the bowstring. Native beeswax (M.: *blas;* S.: *balas*) is applied to the string; it acts as a cement and protects the latter from sun and rain, which would cause it to become slack.

The wild cane (M.: *yakurus;* S.: *dapa*), which is to be used for arrow shafts, is cut immediately after flowering—that is, about August or September. The upper part or flower stalk only is employed. It is first placed in the fire for a few minutes in order to render it more pliable and facilitate the straightening of it. The Indians carefully test the straightness and balance of the reed by looking along it while held at arm's length. After this operation the cane is left to dry and harden in the sun. The reeds are then tied in bundles and kept under the house rafters, over the smoke of the fire, until needed; this makes them immune from boring insects and worms.

Fishing arrows.—There are various sorts of arrows. The simplest one, called *slauni* by the Miskito and Creoles and *sikarna* by the Sumu (pan *subaŝ* in the dialect of Rio Patuca), which is only

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411 used for fishing, consists merely of a shaft of wild cane into which a sharply pointed foreshaft of pejivalle wood, hardened in the fire, has been inserted and firmly tied as stated above. The latter is smoothed with the aid of a machete or large knife, which tools are used after the manner of a carpenter's plane. This kind of arrow is the largest one found on the Mosquito Coast, and it may reach 6 feet in length. Occasionally it is jagged on either side into more or less definite barbs. The arrow does not sink, owing to the feather-light shaft, which will always rise to the surface. On the Mosquito Coast the use of this arrow has also spread to some of the Creoles and Ladinos.

HUNTING ARROWS.—The hunting arrow (M.: *trisba;* S.: *sibaŋ*) measures only 5 feet in length, as the shaft of wild cane is considerably shorter than in the one used for fishing. Unlike the latter, the hardwood foreshaft is not pointed, but a piece of iron or steel made from barrel hoops or other scrap iron is inserted in front. The latter is lanceolate in shape and has sharp edges. As the art of melting metal is unknown to these Indians, they make these arrow points with the aid of files. According to Exquemelin (Engl. edit.: 251), the Miskito in 1671 used iron points or alligator teeth to tip their arrows. Flint, obsidian, turtle shell, sharp fishbone, and shark teeth[47] were also used for this purpose in former days. Barbed arrows and trident or composite arrow heads are now unknown.

BIRD ARROWS.—For birds and small animals the Indians make use of small arrows with blunt knobs of hardwood or beeswax, called *uru* by the Miskito and *ubo* or *ubur* by the Sumu. With these arrows they seldom kill, but merely stun the game, so that they can capture it alive. They are also used in the houses to scare away dogs, pigs, and fowls without being compelled to get up from the seat.

QUIVERS.—Quivers (M.: *trisba taya* "arrow skin") were apparently of ceremonial use only, and they were employed to carry the arrows during the festivals. They were made of red deerskin, as is indicated by their Sumu name (T.: *sana unitak;* P.: *sana onitak;* U.: *sana obatak*). At the present time quivers have disappeared entirely, and the arrows are always carried in the hand by the hunter.

FIREARMS.—The buccaneers of the latter half of the seventeenth century apparently introduced firearms among the Miskito.[48] In

171 [47] The Rama still employ shark teeth to tip their hunting arrows, and they claim that a wound caused with such an arm will almost invariably be fatal.

175 [48] It is possible that firearms were already introduced among the Miskito at an earlier period, during the years 1630 to 1641, when the two islands of Providencia and Santa Catalina, situated off the Mosquito Coast, and now belonging to Colombia, were colonized by English Puritans. The latter opened friendly and commercial relations with the Miskito, who were living chiefly around Cabo Gracias a Dios and Sandy Bay in those days. In 1633 a certain Capt. Sussex

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recent times this arm has also spread to the Sumu. The Indians use muzzle-loading shotguns, called *raks* or *rakbus* by the Miskito and *arakbas* or *arakbas* by the Sumu. These names are evidently of European origin and are taken from the English "harquebus" or the French "arquebuse," or perhaps the Spanish "arcabuz." Powder is known by its English name (*pówtar*), but shot, which is generally kept in the small *pirpis* bottle gourd (*Lagenaria lagenaria*), is spoken of by the Indians as the "eggs of the shotgun" (M.: *raks mabra;* S.: *arakbas suma*). Double-barreled guns (M.: *raks sutki;* S.: *arakbas sutki*, that is, "twin guns") are also occasionally met with.

THE CHASE

SKILL IN HUNTING.—Game is very abundant in this sparsely inhabited part of Central America. The Indian is an excellent hunter; the keenness of his senses is marvelous and nothing escapes his eyes. Every sound is noticed and understood, and the distance and the direction whence any noise proceeds is estimated with surprising accuracy. The Indian has a marvelous instinct which permits him to discover with great ease the footprints of animals and then determine the species to which they belong. He pursues the game through the thicket with the sagacity of the bloodhound.

A MALE OCCUPATION.—The wife never accompanies her husband on the actual hunt, where she would be in his way, for she does not learn to handle any arms. When a number of men organize a hunting party, expected to last more than a day, they may be accompanied by the members of their family. Arrived at a place said to be rich in game, they erect temporary sheds, wherefrom they undertake smaller expeditions in different directions. The hunters start out early in the morning, and before nightfall they rejoin the women and children, who have been left behind at the provisional ranch. The best time for hunting is in the morning before 9 o'clock and in the evening after

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Camock, a member of that Puritan colony, appears to have founded a settlement at Cabo Gracias a Dios. Having gained the confidence of the Indians, the son of one of their most important chiefs was taken to England, where he remained two years, a certain Colonel Morris remaining as hostage among the Indians. Some of these Indians went occasionally to Providencia, where they learned English and were instructed in the Christian religion (Sloan, a: pp. LXXVI-LXXVII; Bridges: II, 138–139). In 1641 this Puritan colony, which by that time had found it more profitable to take up privateering than to pursue the peaceable occupation of farming, was stamped out by a Spanish expedition; the settlers then left for other regions, chiefly to the Bahama Islands.

According to Exquemelin (French edit.: II, 277), who wrote in 1678, the first buccaneers, a French vessel, anchored at Cabo Gracias a Dios 60 years previously—that is, about 1618—and entered into friendly relations with the Indians; the buccaneers would seem, therefore, to have been the first Europeans with whom the Miskito became friendly.

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4 o'clock; that is when the animals and birds are feeding. During the remainder of the day the forest is quiet, and most of the birds roost in the dense treetops.

TRAVEL TO THE HUNTING GROUND.—Travel is effected chiefly by small pitpans, for the Indians are canoe men by necessity, the rivers being their roads. They leave their boat at a certain spot, the parting point of a trail leading to a good hunting ground, that is, a region abundant in fruit trees. To a stranger such hunting trails are barely perceptible; here and there marks on trees made with the machete and broken twigs indicate the direction. The Indians always travel in single file, even when there is a broad road, or when they traverse open country. In marching they always glance at the sun and they observe the direction the clouds are moving, that is from northeast to southwest on the Mosquito Coast. Intuitively they keep in their mind a mental picture of the direction they came from. They walk along, silent and watchful, and at times stand still to listen.

STALKING.—The Indian is an expert stalker, but not a true sportsman; he rarely shoots at the game while it is in motion, except in the midst of a flock of flying birds. He therefore rarely misses the mark, but is not necessarily a good marksman. Owing to his scarce clothing he moves about the forest without making any noise. His color also appears to a certain degree to assimilate with the forest.

IMITATING THE CALL OF THE GAME.—The Indian huntsman imitates the call of animals and birds, in order to call them within arrow or gun shot. Bone whistles (M.: *kyaki wasbaya;* S.: *malka kuñ*) are used to lure the agouti (*Dasyprocta* sp.) under certain trees at the time when the latter drop their fruits. This trick is especially successful during the pairing season of certain animals. The Indian is thoroughly acquainted with the habits of the game.

HUNTING DOGS.—A lot of skinny, mangy dogs, esteemed for their skill in stirring up the game, are found in the Indian villages. With the aid of large dogs trained for the purpose, the jaguar is cornered and the puma is driven up a tree, where it may easily be shot by the hunter. When the Indian ascends a stream he keeps close to the river bank and lets his dog range the woods. The latter, upon scaring up some game, will give tongue immediately and endeavor to drive it to the water. This is the common way of hunting the paca which lives at the river bank and plunges into the water when pursued. This rodent also enters hollow trees and burrows in the ground and is then difficult to secure. Its meat is delicious and is appreciated by the average foreigner.

Before leaving for the chase the dog's snout is rubbed with certain herbs, so that the game shall not be able to smell it. This procedure is also supposed to clear the scent of the dog and sharpen his perceptions. An infusion from a small parasitic plant, called in Spanish

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"lengua de venado" (deer's tongue), is administered by the Sumu to the hunting dogs when they wish to get a deer.

Hunting weapons.—Muzzle-loading shotguns (M.: *raks*, *rakbus*; S.: *arakbus*, *arakbas*) are now used on the chase by all the Miskito, but bow and arrow (see Hunting and Fighting Implements) are still employed by the Sumu for that purpose. The arrow is not discharged at an object more than 75 feet away, but it has the advantage of not scaring the other game in the neighborhood, as does the discharge of a gun. Upon meeting a drove of peccaries, the hunters surround it, and each one of them will attempt to shoot several arrows before the scared game have found an outlet to escape. Three or four arrows are generally taken along by each man, as the wild cane shaft generally breaks during the struggle of the wounded animal; the larger game may even break the hardwood foreshaft or the iron head of the arrow.

Snares, traps, and slings are seldom used to-day. The Kukra are said to have been expert in capturing big game by making a deep hole in the neighborhood of fruit trees. It was carefully camouflaged with the aid of branches and leaves, and a small trail was cut to lead the victims to it.

Deer.—Nocturnal animals, especially the two small species of deer found in the country (*Odocoileus* sp. and *Mazama* sp.), are hunted occasionally with the aid of torches. Toward the close of the dry season the savanna is also fired and drives are organized to hunt deer or other animals, which are driven in a corner, where they are easily secured. Deer, agouti, and birds are the chief game found in the savannas and along the coast.

Peccary.—The white-lipped peccary (*Tayassu* sp.) is highly esteemed as meat; it travels in large droves, which may be heard from some distance. Occasionally it charges the hunter and forces him up a tree; some bushmen claim, however, that all one needs to do in such circumstance is to step behind a large tree, whereupon the animals keep on rushing forward without attempting to turn. The smaller collared peccary (*Pecari angulatus*) has a dorsal gland which Europeans regarded as the navel in former days; this gland has to be cut off immediately after death, otherwise the flesh can hardly be eaten. The weight of these beasts may range from 50 to 100 pounds. The peccaries, like most of the other edible animals, are supposed to have an owner, who keeps them shut up at times, and does not release them unless the sukya practices certain rites of incantation and makes a small offering.

Other mammals.—Among the other game animals the most esteemed are two species of monkey, the spider monkey (*Ateles* sp.) and the capuchin monkey (*Cebus* sp.). The tapir (*Tapirella bairdii* syn. *Elasmognathus bairdii*) is considered a special delicacy in certain regions of the Mosquito Coast; in other districts its flesh is said to be

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224 coarse and unhealthy and even is taboo. The Miskito call it *tilba*, which name is already mentioned at the end of the seventeenth century in the form *tilbu* (M. W.: 311).

LIZARDS.—The largest lizard is the green iguana (*Iguana tuberculata*) which is generally shot while feeding on the river banks or in the branches of some overhanging tree. Sometimes it tries to escape by dashing into the water, where the Indians attempt to catch it by diving after it. It is sometimes kept alive by the Indians until required for food. For this purpose they break the thighs and armbones, and put the backbone out of joint; or else they twist the legs and tie the front ones over the back and the hind ones over the tail by their own sinews. The poor animal is thus unable to run away. The eggs of the iguana are also highly esteemed.

BIRDS.—Various species of guans (*Penelope*, *Ortalis*, *Pipile* [a]), the yellow-crested black curassows (*Crax* sp.), mountain hens (*Tinamus* sp.), quails (*Ortyx* sp.), partridges (*Odontophorus* sp.), pigeons (*Colomba* sp.), and wild ducks (*Cairina moschata*) are esteemed as game birds.

224 482 RETURN FROM THE CHASE.—After the chase the game is carried on the back to the canoe. When a large animal, as a peccary, has been killed each fore and hind foot are tied together with the aid of withes. The Indian, putting his arms through the loops thus formed, with the beast's head downward, carries it on the back, as if shouldering a knapsack. A strap passing over the forehead may also be attached to help support the load. If the hunters are unable to carry all the game at one time the remainder is hung on the branches of some tree, to keep it out of reach of prowling animals.

224 Arrived at his settlement, the Indian merely takes his arms and paddle and walks home, sending his wife down to the waterside to fetch the game. The hair of the latter is then singed by a fire made in the open. The neighbors, who are generally near relatives, receive a share of the meat.

261 Then a big pot is put on the fire, for the Indians do not think of the morrow and, if possible, consume all the meat at once. The women and children do not have patience enough to wait until it is cooked, but they cut off small slices, which they roast over the hot coals and eat, with a few bananas or plantains. If they are unable to dispose of all the supply on the first day the remainder is barbecued without salt over a slow fire. (See Culinary Arts.)

224 777 HUNTING CHARMS.—Many charms are used for luck in hunting. Stones or pebbles, found in the stomach of certain animals, are

[a] The large guan (*Penelope* sp.) is called *kwamu* by the Miskito, a name found already by M. W. (311) in the form *quawmoes*.

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supposed to attract the same species and entice it within gunshot.* The bones, teeth, and skulls of animals killed in the chase are said to have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaligni*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal weapon of both tribes under consideration. (See Hunting and Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time great festivals, called *sauk lâwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

* There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

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702 The men taking part at the *asañ lāuwana* had the whole body
painted black and wore nothing but the loin cloth. They had to be
783 ceremonially "pure" (*sunu*), a condition which was obtained by
776 abstinence from women, salt, red peppers, and intoxicating liquor.
Any one daring to come to the festival in a state of "uncleanness"
was supposed to be killed by an awful giant, some sort of evil spirit,
which came from some neighboring hill, and walked about the house
with a quiver full of arrows. He was well treated and given plenty
of *puput* (maize liquor), for every one was afraid of him.

At the *asañ lāuwana* trials of endurance took place in order to train
702 the young men in supporting pain without the slightest groan. They
866 also had the object of settling disputes which had been in suspense
627 for some time. One man leans over and lets his opponent strike his
back as hard as he can with the point of the elbow, until the latter
is tired of punching. He is not supposed to utter the least groan
nor show any other sign of pain. From time to time he merely says
yañ al yañ, "I am a man," whereupon his adversary replies *yañ bik
al yañ*, "I am also a man." When the latter is tired of punching the
two men change places and he has to submit to the same rough treat-
ment of his back by the other. Anyone giving up the struggle before
his opponent is tired of striking is considered a coward; occasionally
death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter
702 box a little, but it seems to be a point of honor with them to give and
526 take blows in turn, and not to try how often they can strike each
other as much as how long they can stand up to it.

726 PREPARATION OF AN EXPEDITION.—When the Miskito projected
an armed expedition against the other Indian tribes or against the
787 Spaniards they consulted one of their principal sukyas in order to hear
if they would be successful. If the sukya's prediction, after having
consulted the spirits, was unfavorable regarding the issue, the intended
expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously,
714 perhaps with the object of scaring the enemy. Fair fighting was
726 unknown. Attacks were carried out during the night, the enemy
being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at
721 war with each other as far back as the seventeenth century (Dampier:
I, 9–10; M. W.: 300, 302, 305). These tribal wars continued
throughout the eighteenth century and turned out to the advantage of
the Miskito, who, having received European arms through the
agency of the buccaneers from Jamaica, were able to conquer several
subtribes of the Sumu from whom they collected tribute in the shape
of canoes, deer skins, maize, cacao, rubber, etc.

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The Paya of Honduras were likewise expelled from the coast, the Miskito advancing as far as Rio Tinto, or Black River, and driving their enemies to the headwaters of the various streams. From the end of the seventeenth century on the Miskito frequently undertook raids into the territory of the Paya and exacted such large contributions of cattle or other things that the latter were obliged to steal them, at the risk of their lives, from the neighboring Spanish settlements, in order to save their families from being carried away and sold into slavery. During these excursions the Miskito took possession of the houses, wives, and children of the Paya until their demands were complied with. On account of this barbarous treatment many Paya fled to the Spanish settlements for protection (Long: I, 326–327). These incursions of the Miskito into the Paya region have continued until recent times (Young: 81; Conzemius, b: 32–33).

The Miskito not only became masters of the whole Atlantic coast line from Rio Tinto to Rio San Juan, but they carried on expeditions in seagoing canoes as far south as Chiriqui Lagoon and even beyond. These incursions were the chief cause of the depopulation of the Talamanca region of Costa Rica. The Miskito also proceeded inland up Rio Sixaula or Tiliri as far as the junction of Rio Coen and Rio Lari.

Isolated marauding expeditions by the Miskito to Costa Rica and Panama still continued practically throughout the eighteenth century. Cockburn (236) states that they invaded Chiriqui in 1732. In 1758 they are said to have been engaged in capturing Indian slaves around Bocas del Toro (Cuervo: I, 349–353). Roberts, writing in 1816, says the following regarding the encroachments of the Miskito on the territory of the Valiente Indians of northeastern Panama: "The Valientes are enemies of the Spaniards and pay a sort of tribute or acknowledgment to the Miskito King annually, which they consider in the light of a gratuitous present according to ancient custom, rather than an acknowledgment as subjects or a mark of subjugation. On more than one occasion they have refused to pay this tribute, and about 50 years ago, when a dispute took place on the subject, the Miskito King's uncle, with the whole of the chiefs and people who accompanied him, to the number of about 50 men, fell a sacrifice to their resentment (Roberts: 71).

The Miskito are even said to have gone as far as to attempt the subjugation of the San Blas Indians (also called Cuna, Tule) on the Isthmus of Panama, against whom their last expedition was sent about 1796. But the invaders, who were 300 men strong, were nearly all killed in the different engagements, and very few of them returned home (Roberts: 49–50). This is the only authority for Miskito incursions as far south as the Isthmus of Panama; the Indians them-

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721 selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

721 Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras)
197 to Chiriquí Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

721 The place names belonging to the Miskito language, which may be met with all along the Atlantic shore of Costa Rica and Panama as
103 far south as King Buppan's Bluff, owe their origin to the above-mentioned marauding expeditions (Conzemius, a: 300–306). Still permanent settlements were not made by the Miskito on that vast region, the southern limit of their habitat being formed by Pearl Lagoon, where they established themselves during the latter part of the eighteenth century. About that same period they also spread up some of the larger rivers, as the Patuca, Guagua (Wawa), Cucallaya, Prinsapolca, Rio Grande, and especially Rio Coco; on the last-named stream they may be found as far up as Bocay, that is, about 300 miles from the sea by the circuitous course of the river.

727 TREATMENT OF PRISONERS.—As stated before, the Miskito began their slave-hunting expeditions into the territory of their neighbors
567 toward the end of the seventeenth century. The captive women and children were either kept as slaves (M.: *alba* [51]; S.: *warau*) or they were sold to the Jamaican traders who arrived occasionally on the coast. The boys, when arrived at the age of puberty, were allowed to take a Miskito wife, and the children of such unions grew up as free members of the tribe.

721 Slave-hunting expeditions in seagoing canoes were particularly directed to the Talamanca region (southeastern Costa Rica), where many Tiribi (Terbi) Indians were reduced to slavery. The same fate met the aborigines living around Chiriquí Lagoon (M. W.: 302; Peralta, a: 20, 93, 95; Peláez: II, 156; Young: 35; Conzemius, a: 300–301). Many references to the Miskito slavers may also be

[51] This word has evidently some connection with *albawina*, by which name the Miskito called the Sumu formerly, or perhaps all their Indian enemies in general. The Black Carib or Garif apply to the Miskito the name *idudu*, which word likewise had originally the meaning of "slave." (Compare *iteto* "slave" in Father Gumilla's work.)

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found in the works of the historians Juarros, León Fernández, R. Fernández Guardia, Ayón, Gámez, and Vallejo.[85]

In 1722 Spain protested to the British authorities of Jamaica on account of these slaving expeditions, alleging that the Miskito had captured in the valley of Rio Matina and on Tojares Island (Chiriqui Lagoon) over 2,000 Indians (Talamancas, Viceitas, Arinamacs, Abubaes) and sold them to Jamaican traders for arms and ammunition. On October 8, 1722, Diego de la Haya, Governor of Costa Rica, addressed a note to the authorities of Jamaica for the restitution of these Indians. (Peralta, a: 20–31; Fernández: IX, 153.)

The Sumu apparently did not enslave their prisoners, but killed them outright. Scalping was unknown, but the teeth and nails were extracted from the unhappy victims and carried round the neck as trophies. Certain subtribes of the Sumu were cannibals and roasted the enemies captured in war.

ALLIANCE OF THE MISKITO WITH THE BUCCANEERS.—During the seventeenth century the buccaneers, who were active in the Caribbean Sea preying upon the commerce of Spain, entered into friendly and commercial relations with the Miskito, who likewise were the enemies of the Spaniards. According to Exquemelin the first buccaneer vessel anchoring at Cabo Gracias a Dios was French. The captain was well received and made a few presents to the Indians, who in turn gave him products from their fields. When he left he carried along two of these Indians in order to provide his vessel with food, having observed their great skill in fishing. The two Indians were well treated; they learned French, and after one or two years were carried back home again. From that time the French and the Miskito became friends. Indian women were given to the former during their stay at Cabo Gracias a Dios and in payment the buccaneers gave iron tools. They had no trouble in being supplied with Indian fishermen when they left for a cruise, and some of them even picked up the Miskito language. The French made the English acquainted with their new friends. Many Indians served three or four years on the vessels of the buccaneers, learning either French or English, and then were paid off in iron tools (Exquemelin, Engl. ed.: 250; French ed.: II, 262–264).

It would appear, however, that later the English buccaneers were more esteemed than the French. Dampier (I, 8) states that the Indians "like the English but do not love the French," while according to Sloane (a: I, p. LXXVIII) the Miskito "do not allow any other nation but the English to settle among them and that they have

[85] See also Gaceta oficial de Costa Rica, 1864; A. von Frantzius, Archiv für Anthropologie, IV, 1870, p. 104; Thiel, Datos cronológicos para la historia eclesiástica de Costa Rica San José, under 1693; Restrepo, Viajes de L. Wafer, Bogotá, 1853, p. 110.

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some propensity to the Dutch, but hate the French mortally for their wanton behavior toward their wives." The statements of these two English authors should, perhaps, be accepted with reserve.

The Miskito were of valuable assistance to the buccaneers, for they were, and still are, singularly skillful with the spear. When a party of buccaneers put to sea without provisions they steered to the feeding grounds of the sea turtle or they stopped at a lagoon where the manatee was to be found. Here two Indians set out in their own small canoe. Two Miskito were able to catch enough fish, manatee, or turtle to supply a vessel of 100 men. For that reason they were much esteemed by the buccaneers and nearly every vessel from Jamaica had a couple of these Indians on board (Exquemelin, English ed.: 250; Dampier: I, 1–2, 35–37, 160, 181, 234, 277, 453, and II, part II, 13, 109; Raveneau de Lussan: 440).[85]

The Miskito were not only used as fishermen by the buccaneers but they also bore arms. They were bold and courageous in the fight and they shared in the capture. Among these sea rovers the Indians became first acquainted with the use of firearms and soon proved very good marksmen (Dampier: I, 2, 8). Miskito strikers even accompanied the buccaneers in the Pacific Ocean. In January, 1681, a party of English freebooters under Sharp and Watling were anchoring at the island of Juan Fernandez in the southern Pacific, about 400 miles west of Chile. Being persecuted by three Spanish vessels they hurriedly lifted anchor and sailed away, leaving behind a Miskito named William, who was hunting in the bush at the time. This Indian lived a solitary life on the island for three years when finally he was rescued by another party of English buccaneers under Cook. The first man from the rescuing vessel jumping on land was likewise a Miskito, named Robin. Dampier belonged to the party and relates the account (I, 84–86).[86]

MARAUDING EXPEDITIONS TO THE SPANISH SETTLEMENTS.—Led by their allies, the buccaneers, the Miskito also formerly undertook incursions in the interior of Honduras and Nicaragua by ascending the larger rivers. They surprised and plundered the nearest Spanish settlements, capturing the women and children. During the eighteenth century the towns Catacamas, Juticalpa, Segovia (now Ocotal), Jinotega, Matagalpa, and some settlements of Chontales were several times entirely destroyed and some of them were then

[85] Vide also Basil Ringrose, The History of the Bucaniers of America. Part II. The dangerous voyage and bold attempts of Capt. Barth. Charp, Watlin, Sawkins, Coxon, and others, in the South Sea. London, 1699, chap. XI, p. 54.

[86] See also Ringrose, *ubi supra*, chap. XV. The Scotch sailor Alexander Selkirk, whose adventures suggested to Daniel Defoe his famous work Robinson Crusoe, was therefore not the first or the only inhabitant of Juan Fernandez; the latter lived there from 1704 to 1709.

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transplanted some distance away from the navigable rivers in order to be less exposed to attack (M. W.: 300, 302, 306; Peláez: II, 165; Peralta, b: 102, 120; Belt: 241, 255–256). In those days the products of Nicaragua were generally shipped by way of Rio San Juan, but this important waterway was often in the hands of the Indians.

Attacks by the Miskito on the Spanish settlements were also carried on occasionally as far north as Rio Chamelecón in Honduras; sometimes these Indians joined the English logwood cutters operating in what since has become British Honduras.

More frequently the canoes of the Miskito were directed southward toward Rio Matina in Costa Rica, where the Spaniards had established important cacao plantations during the seventeenth century. The latter had to be abandoned later, owing to the incursions of the Indians. The historians of Costa Rica devote large space to these expeditions into their territory. (See also M. W.: 302, 307, 310.) Although they ceased gradually during the latter part of the eighteenth century, acts of authority were exercised by the Miskito on that coast for some time afterwards. Still in 1838 they monopolized the fishery of the hawk's-bill turtle as far as Puerto Limón, collecting a tribute from the fishers engaged in that occupation (Cooper: 12).

THE MISKITO IN THE JAMAICAN MAROON WAR.—The Miskito rendered very valuable service to the English of Jamaica in aiding to suppress the maroon rebellion on that island. These maroons were the descendants of the Negroes and mulattoes who took to the mountains, in order to preserve their freedom, when the English in 1655 wrested Jamaica from the Spaniards.

On June 25, 1720, a convention was signed between Sir Nicholas Lawes, Governor of Jamaica, and Jeremy (Jeremias), "King" of the Miskito, whereby the latter engaged himself to send a body of Indians to track the revolted slaves. This treaty was formally agreed to and passed upon by the Assembly of Jamaica.

Two hundred Indians were brought to Port Royal and organized in companies under their own officers. They were paid 40 shillings a month and a pair of shoes. They remained several months and rendered valuable services to the English. A few years later the maroons were active again and about 1725 Capt. Robert Lade brought 100 "Muschetos" Indians to Jamaica to fight them (Lade: II, 7, etc.).

Again, in 1738, 200 Miskito were brought for the same purpose. They were formed into companies under their own leaders with white guides assigned to each company, who were to lead them to the enemy. They did good service as trackers and with their assistance the maroons were soon pressed on all sides, cut off from their provision grounds, and compelled to make peace (Long: II, 344–345; Edwards: I, 529–530).

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CULINARY ARTS: METHODS OF FOOD PREPARATION

262 These Indians obtain their food from agriculture, hunting, fishing, and by gathering the wild fruits of the forest. Among the Miskito living near the coast the staple food is sweet cassava, but in the other regions of the country its place is occupied by bananas; among the Sumu maize also plays a great rôle.

252 While at home the men never do any cooking and would consider such an act beneath their dignity, but after the return from the chase they barbecue the meat which is not to be consumed immediately.

261 The Indian has an enormous appetite when there is plenty of food, especially fish and meat, at hand; on the other hand, in case of food shortage, they are able to travel and work with scarcely anything to eat.

264 SERVING OF THE MEAL.—No regularity is observed in eating, but food may be taken at any time. When the meal is ready the grown-up men are served first in their hammocks with the best and largest shares. A calabash of broth or soup (M.: *pilali;* S.: *di wasni, di wasks*) and a bijagua leaf containing salt is also taken to them. The women and children eat together; they sit on the ground, forming a circle around the remainder of the food, which is spread upon a layer of large leaves. There is, as a rule, little left when the men have been served, but the women and children have taken their share previously. While the pot is boiling they crowd around the fire, and keep on eating little bits of meat together with plantains or bananas roasted in the hot ashes. The Indians do not speak much during meals; a visitor is never questioned while he is eating, as that would be a breach of etiquette.

262 [252] ANIMAL FOOD.—Meat and fish are either boiled with water or roasted in the hot ashes. The meat is obtained from the chase; the Miskito living on the edge of the savannas also own cattle which they slaughter for meat. Other domestic animals, as pigs and fowls, are seldom eaten, but are commonly sold to strangers; this is also the case with fowl eggs. The Indians, as a rule, do not care much for the flesh and products of animals of foreign origin. Certain indigenous animals are taboo. The favorite meat of both tribes is the red monkey (*Ateles* sp.) and the white-lipped peccary (*Tayassu* sp.).

262 252 The Sumu sometimes eat frogs (M.: *burka;* S.: *burka, burki*), removing their skin first in the hot ashes; to the Miskito this amphibian is taboo. Birds' eggs are eaten, even when they are practically rotten, but the eggs of the domestic fowls are not esteemed. The winged females of the leaf-carrying ants (*Atta cephalotes* syn. *Oecodoma cephalotes;* M.: *wiwi;* S.: *iedaś*) are also caught when

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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakuti* by the Miskito and *wiscano* by the Sumu. The Miskito living near the sea also fry fish in cocoanut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[88] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin;* S.: *pala, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

[88] Noticias estadisticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1807.

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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pâta* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lâsa, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayak*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, pisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramfira;* S.: *jasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *wahsa*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tuna*) and several species of granadillas or fruits of passion

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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*). 222

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer. 251

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [272] [252]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul. [272]

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tahra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukya uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them. 276

[272] Bell (b: 27) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

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276 Still, it is not certain that tobacco was known to these two tribes in pre-Columbian days. Their names for the plant (M.: *twako;* S.: *aka*) point toward its introduction by the Europeans. The Indian tribes living on the Pacific side of Nicaragua at the time of the discovery knew tobacco, however, and they smoked it in the form of cigars. Our name "tobacco" comes from the word *tabaco*, which the Indians of Haiti applied to a sort of pipe. This instrument consisted of a small wooden tube, shaped like a Y; the two points of it were inserted into the nose, while the other extremity was held in the smoke of burning tobacco, and thus the fumes were inhaled.

At the present time the plant is not cultivated by the Indians under consideration. Leaf tobacco is imported from the United States, and this foreign product is preferred to the one raised in Central America. Among the Sumu smoking is confined principally to the men, but this practice is common enough among Miskito women and children. The leaf is smoked chiefly in pipes (M.: *twako mina;* S.: *aka pan*, *aka pana*), which are made locally of clay, wood, or maize cobs; imported clay pipes are also bought in the shops. According to Wickham (c: 206), the Ulwa of Rio Escondido do not smoke the pipe, but use the leaf rolled roughly in cigar form made on European models. Very few chew tobacco, while the habit of snuffing is entirely unknown. Among the females the pipe is frequently passed round, each one of the women present taking a few puffs and then passing the pipe to her neighbor. A supply of tobacco is a readily accepted currency for the acquisition of food in the more primitive parts of the country. For small favors the traveler is also expected to give one or more tobacco leaves in exchange.

263 CAYENNE OR RED PEPPER.—Various species of very pungent, small red peppers (M.: *kuma;* S.: *anmak*, *añmak*), growing in a semiwild state on perennial shrubs (*Capsicum frutescens* L. and *C. baccatum* L.), are used with food as a stimulant and as an excitant. They were found in the Miskito kitchen during the times of Dampier (I, 9).

The Miskito usually prepare a "sauce" (M.: *kuma laya;* S.: *añmak wasni*, *añmak waska*) with these peppers, which they mash and then add some lime juice and salt. They store it in bottles and pour a small quantity of the liquid on their food while eating. The Sumu, on the other hand, grind the red peppers on the metate together with coarse salt. Upon serving the meal the women place a little of this mixture on a large leaf, and every one seasons his own food. These peppers may also replace salt entirely. The large "sweet" chilies (*Capsicum annuum* L.), which grow on annual plants, are also occasionally planted and eaten as a vegetable.

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SALT.—There is no record of the Indians obtaining salt from the natural salt incrustations found occasionally in the country, and which are visited by certain wild animals.

The Miskito living near the seaside occasionally get salt by boiling the water of the sea or the adjacent brackish lagoons. At the height of the dry season the lagoons are said to be even richer in salt in certain parts than the sea itself. The water is boiled in big iron pots until evaporated, and the salt remains at the bottom in the form of a cake. The Sumu living a short distance inland from Rio Prinsapolca and Brangman's Bluff employed in former days a very primitive and laborious method, which is described as follows by M. W. (302): "They make a great fire close to the seaside, which when it has well burned the sticks asunder, they make them singly, and dip the brand in the sea, snatching it out again, not too soon, nor too late; for, by the first, the drops of salt water which remain boiling on the coal would be quite consumed through too much heat, the coal not being sufficiently quenched, and, by the latter mismanagement, would be quite extinguished, and want heat to turn those drops of water into corns of salt, which, as fast as made, they slightly wipe off with their hand into a leaf, then put that brand's end into the fire again, and take out the fresh ones successively, that in half an hour's time a man makes about a pound of grey salt."

In practically all the Central American languages the names for salt and sea are identical. The Miskito have, however, no native name for salt and call it by the Spanish word *sal*, while their term for sea is *kabo*.* The Sumu call both sea and salt *kuma*, which latter name the Miskito apply to red peppers or chilies.

SUBSTITUTE FOR SALT.—The Sumu of the interior make a substitute for salt from the ashes of the midrib of certain palms, in particular the pacaya or mountain-cabbage palm (*Chamaedorea* sp.; M.: *silina;* S.: *tapal*) and a smaller, spiny species, known by the Indian name *kakka*. The ashes are collected in a vessel with hot water, in order to dissolve their contained salts. After removing all impurities, the solution is evaporated in a large earthen vessel by boiling it down over a slow fire, whereby a whitish crystalline matter becomes deposited, which furnishes a good substitute for salt. This method was observed by the Franciscan missionary Fernando de Espino in 1667

* Cabo is the Spanish name for "cape," and the phrase "El Cabo" is used for short for the settlement Cabo Gracias a Dios situated at the mouth of Rio Coco. On the strength of this it has been claimed by some that the Miskito were originally an inland tribe, who had no knowledge of the sea, and that they first saw it when they emigrated from the interior down the Rio Coco to El Cabo, adopting therefore this latter name to designate that great water sheet. This explanation is of course unsatisfactory.

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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[a]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bâinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *fûlala, tmariñ;* S.: *awal*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

COOKING OILS.—The kernels contained in the seeds of various palms
252 are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), bone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[a] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, hazendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legía sin la ceniza, y a fuego manso la van calentando hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

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The eating of earth (M.: *tasba;* S.: *wõõ*), clay (M.: *aldibla;* S.: *wõõ*), sand (M.: *dupa;* S.: *kõlõmak*), and charcoal (M.: *kusako, tuisako;* S.: *kusmak*) is very common among women and children. 261

NONFERMENTED BEVERAGES

DRINKING WATER.—The whole country is well watered and the Indians obtain their drinking water from the running streams on the banks of which their settlements are generally situated. Wells are also dug by those living near the sea. 312

WATER LIANAS.—Several varieties of water lianas, varying in size from 3 to 5 inches, can be found throughout the forest. When the stem is merely cut through only a few drops of water will issue; the vine must then be severed immediately about 2 or 3 feet farther down, whereupon a continual stream of water will flow, quite sufficient to quench the thirst of a person. The Indian holds the severed part of the stem in a vertical position, allowing the sap to run directly into the mouth. The vine must be cut above first, otherwise the sap will ascend so rapidly that hardly any will be obtained.

HONEY.—The Indians are very fond of the honey (M.: *sasma;* S.: *smak*) from the various species of wild, stingless bees which make their nests in hollow trees. The entrance to the nest is easily ascertained by watching the little bees flying about. The Indians either climb or fell the tree in order to get possession of the honey. The latter is always taken as a beverage, after being mixed with water, but even in its natural state it is not viscid, but almost as fluid as water. It has a subacid, highly fragrant taste. The Indians, while away from home, may make a meal of the contents of such a bee nest, but the average foreigner does not care much for it, and finds it greatly inferior to that of the European domesticated bee. The natives collect in bamboo joints what they are unable to consume immediately to take home to their family. 222

MILK.—The consumption of cow's milk is not general. When I inquired the reason from some Sumu of the upper Rio Waspuk they answered that they are not the descendants of cows, to drink their milk. 272

BANANAS AND PLANTAINS.—A great variety of nourishing drinks of vegetable origin are prepared by the Indians under consideration. Bananas are consumed largely in the shape of a pop, known locally by the name "wabal." The bananas for this purpose are used generally in the green state, before their contained starch has turned into sugar. They are peeled and cooked in an iron pot. Then the water is poured off and the bananas are thoroughly mashed in the same pot with the aid of a short wooden stick. During this process cold water is added little by little, and the whole is well stirred. No salt

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272 is added. Wabul is served generally between the meals; if a stranger arrives at an Indian village the women will immediately prepare some of this beverage for him. Rarely do they offer any to a white man unknown to them, as uneducated foreigners have at times refused with disdain the wabul offered to them. The drink is always served in calabashes, which are the drinking vessels of the Indians. Ripe bananas and plantains are also used occasionally in making wabul, but green plantains are too tough and hard to mash. If, instead of cold water, cow's milk or cocoanut milk is added to the fruit, the flavor is greatly improved, and the beverage is appreciated by the average foreigner.

The Sumu living on Rio Patuca are very fond of a beverage made from ripe bananas, which are cooked, mashed, and then allowed to remain for a day or two in a large earthen vessel, until this mass has turned sour. In case the bananas have been only half cooked the drink will be light yellow in color, and it is then known as *pihbra* (*pi* or *pih*, abbreviated from *pihni* "white"). If, on the other hand, the fruits are well cooked the resultant drink will turn dark red, and is then called *wahisa pûni* "red bananas." The Miskito name for either one of these two beverages is *pûnlaya* "red drink."

OIL PALM.—The fruits of the indigenous "hone" or oil palm (*Elaeis melanococca* Gaertn.), called *ohoñ* or *whuñ* by the Indians, are boiled in order to liberate the red pulp surrounding the seeds. This pulp is then passed through a calabash pierced with holes like a collander and mixed with wabul. This is a most agreeable and nourishing drink, which is prepared only by the Miskito, for the oil palm does not grow inland in the region inhabited by the Sumu. It is the same palm from the seeds of which the Miskito prepare the well-known hair oil, called *batana* on the Mosquito Coast. The drink has been praised by Ravenseau de Lussan[a] (438–439) and by M. W. (308), but neither of these two authors mentions it being consumed except together with wabul, as is the case with the Miskito of the lower Rio Coco at least. This beverage appears to be mentioned by Exquemelin (Engl. edit.: 251) under the name *achioc*.

MAIZE.—A number of nourishing drinks are prepared from maize. One of the most common is the one called "pinol" by the Ladinos (M.: *syuñka;* S.: *am bokol, am tok*). The grain is toasted over a charcoal fire until it begins to "pop"; it is then ground on the metate and kept until needed. For use it is mixed with clear water and sweetened with sirup made from sugarcane, or with wild honey. The drink is cooling and refreshing, but as the maize is not finely ground, the dry particles occasion a tickling sensation in the throat.

On the upper Rio Coco and on Rio Bocay the Indians are very fond of another beverage (M.: *wasplu;* S.: *wasbol*) prepared from maize. The dry grains are ground and cooked afterwards; a small

[a] This author calls it *koos*.

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quantity of sprouted maize is then added, which imparts a slightly sweetish taste to the drink. It is consumed either fresh or after having been allowed to turn sour. 272

Atol (M.: *aya-makala;* S.: *kuri, am-tunun-ba, ama-tunani-ba*) is a very refreshing beverage which the average foreigner will appreciate. The young or green grains are cut off from the cob with a knife, after which they are passed through a sieve, and the drink is ready. It has great favor among the Ulwa especially. A similar beverage, but inferior in quality, is prepared from old maize; it is called *ulañ* by Miskito and Sumu. If the latter drink is allowed to turn sour it is known as *aya swahni* (M) "sour maize" and *dipis* (S).

Pozol (M.: *pusul;* S.: *sdûa*) is also consumed occasionally, and has apparently been introduced by the Ladinos. This drink is made from the "masa" or paste prepared by treating maize with lye and grinding it upon the metate. It is generally taken unsweetened.

Cacao.—An excellent food drink is prepared from cacao by the Sumu, especially by the Ulwa subtribe. The beans are roasted slightly over a charcoal fire and the outer integument is removed. They are then ground upon the metate together with a large quantity of toasted maize. For use about two teaspoonfuls of the powder and a little sirup are added to a calabash of water and the mixture is agitated for a few moments with the "molinillo." The resulting drink much resembles the chocolate of the Ladinos in consistency and taste, but it is of somewhat gritty character, due to the presence of the ground maize. Sometimes the drink is adulterated with the parched and ground kernels contained in the seeds of the scomphra palm, the pejivalle palm, or the zapote; it may also be flavored with vanilla and cinnamon. M. W. (308) observed this beverage among the Miskito and states that in those days it was sweetened with ripe plantains and wild honey.

Bunya or soured drinks.—These Indians are very fond of consuming vegetables in the shape of a beverage after they have been allowed to turn sour. This is especially the case with cassava, tania, sweetpotatoes, yams, and pejivalles. After being boiled in water, these foodstuffs are mashed; the resulting paste is then wrapped up carefully in large waterproof leaves, tied with rough withes or vegetable fibers, and attached to the rafters of the hut. Bijagua leaves are generally used for this purpose, as they are tougher and not as liable to split as banana or plantain leaves. Such food is known to the Miskito as *bunya*, and to the Sumu as *tapañ*; the Miskito of the interior, however, employ the Sumu name when the ingredients are not cassava. The Sumu also prepare maize in this manner; they cook it and then grind it upon a stone, so that it has the consistency of a thick paste.

Such soured food is always taken along on a journey. If the Indian wants to quench his thirst or hunger he stops at a running stream,

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272 places a handful of the thick paste in a calabash, and mixes it thoroughly with water. In the case of maize or pejivalles the thick skin is first squeezed out with the hands and thrown away.

INTOXICATING BEVERAGES

273 Bacchanalian orgies play an important part in the semireligious carousals and in the social life of the two tribes under consideration. Fortunately for themselves the Indians seldom have the means to buy spirits at the rum shops and their homemade drinks consume too much of their provisions to be indulged in frequently.

DISTILLING.—The Indians do not appear to have known how to distill, but before the arrival of the Europeans they knew how to get drunk on a number of fermented beverages. Aguardiente or rum (M.: *tahpla;* S.: *tapalni, tapalka,* lit.: "bitter") may be obtained by the Indians in the local shops. In Honduras and Nicaragua the manufacture of this spirit is a government monopoly, which is farmed out to contractors, generally political supporters of the party in power. There are many private illegal stills in the less accessible parts of these republics, which are operated chiefly by Ladinos. Levy (b: 300) states that the Ulwa of Rio Escondido distill an alcoholic liquor from cassava with the aid of an inform earthen still; the latter probably corresponds to the one depicted by Belt (233) from the neighborhood of Santo Domingo (Chontales) at the headwaters of Rio Escondido. I have met a similar simple apparatus among the Paya of Honduras. In these two cases, however, it served for the distilling of sugar-cane juice or brown sugar. Belt (233–234) describes such a "sly grog" manufactory as follows: "It consisted of two of the common earthenware pots of the country, one on the top of the other, the top one having had the bottom taken out and luted to the lower one with clay. This was put on a fire with the fermented liquor. The spirit condensed against the flat bottom of a tin dish that covered the top vessel, and into which cold water was poured, and fell in drops on to a board, that conducted it into a long wooden tube, from which it dropped directly into bottles."

FERMENTED DRINKS.—A great number of fermented drinks are prepared by these Indians. They are known locally by the general name mishla (M.: *misla;*[80] S.: *wasak*); distinctive names are, however, given

[80] This name (*michela, mishlaw, muskalaw*) appears to have been formerly restricted by the Miskito of Cabo Gracias a Dios to a beverage prepared from ripe bananas or plantains, either boiled or roasted (Exquemelin, French ed.: II, 268; Dampier: I, 314; M. W.: 307). Lionel Wafer (A new Voyage and Description of the Isthmus of Panama, London, 1699, pp. 154–155) gives the name *mislaw* for an unfermented beverage prepared from ripe plantains. None of these seventeenth century authors mention the use of cassava for this purpose, although they list it among the food plants of the Miskito.

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to the beverages made from maize. They are all prepared on identical lines, the ingredients only differing in each case. These various drinks are stored in large earthenware vessels or in casks of foreign manufacture; the Miskito of the seventeenth century also used canoes for this purpose, as do the Paya of to-day (Dampier: I, 10). 273

(a) CASSAVA.—Among the Miskito and some of the Sumu the most important of these beverages is the one made from sweet cassava (*Manihot palmata* Muell.); its preparation does not differ essentially from that of *kava* or *kawa* among the Polynesians. The root is first peeled and cooked, then mashed or merely cut in small pieces, and finally thrown into a cask or a large earthenware vessel (M.: *sumi;* S.: *suba, sau suba*). Hot water is added and the whole is then covered with large leaves, the heat causing it to ferment. A small quantity of the root is chewed by the women, until thoroughly saturated with saliva, and then spat out again in the vessel in order to activate fermentation. The latter process may also be accelerated by the addition of sugar-cane juice and even by drum beating. From time to time the mass is stirred and skimmed with the aid of a paddle-shaped thin stick, for it effervesces like must. Fermentation will be complete in two or three days. The beverage looks much like buttermilk, but it is sourish in taste. Its toxic power is not very great, but the Indian consumes such a large quantity that he finally falls down on the ground, completely drunk.

(b) OTHER VEGETABLES AND FRUITS.—The above receipt may also be used with sweetpotatoes, yams, tania, or eddoe, and the fruits of the pejivalle plam and the breadnut tree.

The fruits of the cashew and other trees, as bananas and plantains, are merely bruised, with the addition of water, allowing the juice to take its own time to ferment. The most potent drink is the one prepared from roasted pinespples, which has been mentioned already during the second half of the seventeenth century by Dampier (I, 10) and M. W. (308). Sugar-cane juice may be added to these various beverages in order to augment their potency.

Pure fermented sugar-cane juice is extensively consumed in certain regions, especially by the Indians living on Rio Patuca. The juice is merely squeesed out with the aid of a simple hand mill, and fermentation may be assisted by adding to the liquid a small quantity of a leguminous vine (M.: *snak, snik;* S.: *sinak*), which bears small bean-like pods.

(c) MAIZE.—Among the Sumu maize (*Zea mays* L.) takes the place of cassava as the chief ingredient for the favorite alcoholic drink. The Sumu and the Miskito of the interior make a number of beverages from this grain. The most potent of them is called *pupui* by the Twahka and Panamaka and *sili* by the Ulwa, but it is unknown to the Miskito; it is reserved for the great festivals, such as the *sau*

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273 and the *asañ-lauwana*. Dry maize is ground on the metate, wrapped in large leaves after the manner of the "tamales" of the Ladinos, and thus cooked in boiling water. It is then kept for weeks or months over the smoke of the fire, whereby it becomes covered with a grayish mold, which accounts for its name (*puput* "gray").[69a] A few days previous to the celebration of the feast the mass is taken out of the leaves, crumbled and cooked with a small quantity of water; it is then poured in a hole made in the ground over which a provisional shed has been erected. A thick layer of bijagua leaves or of balsa bark prevents the beverage from coming in contact with the ground. In two or three days fermentation will be completed and then the drink is ready for the palate. Before being served this potent liquor is strained and mixed with water.

Another intoxicating drink (T., P.: *mahkrus;* [illegible]*i tuhdey*) is made as follows: Either dry or green maize is ground on the stone, wrapped in leaves and boiled in water. Afterwards when this mass has cooled off a little, it is chewed by the women, and then left to ferment. From sprouted Indian corn a similar drink (M.: *aya urwan;* T.: *am uus;* P.: *ama uus;* U.: *am patañ*) is prepared, but it is not chewed nor wrapped in leaves. Among these Indians the latter drink is also sometimes known by the general Spanish name chicha (*sitsa*).

(d) Palm wine.—Occasionally the sap from various species of palms, as the coyol (*Acrocomia vinifera* Oerst.) and the cohune or corozo (*Attalea cohune*), is left to ferment. The tree is felled and a concavity is cut into the stem, just below the crown of leaves. In about half an hour's time the sap will be found collecting in the hole, scarcely any of it running out at the butt, where the palm has been cut off. The sap may be taken fresh, but it is generally allowed to ferment, which process will be completed in two or three days. This "wine" is of a clear yellowish color.

(e) Other fermented drinks.—Exquemelin (Engl. ed.: 251) gives the name *achioc* to the most common fermented beverage of the Miskito of the seventeenth century, which he describes as follows: "It was made from a palm seed, bruised, and afterwards steeped or infused in hot water, till it be settled at the bottom. This liquor being strained had a very pleasant taste, and is very nourishing." The seeds referred to are probably those of the oil palm from which a nonfermented drink is prepared to-day. (See Nonfermented Beverages.)

Levy (b: 300) states that the Ulwa of Rio Escondido also prepared fermented beverages from the tender annatto seeds and from

[69a] Crévaux (Voyage dans l'Amérique du Sud, Paris, 1883, pp. 405–406) gives the receipt for a maize drink from the Guianas which is prepared on identical lines.

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the pulp surrounding the wild cacao (*Theobroma bicolor* ?). This same writer (b: 308) likewise mentions a drink made from coconuts; it was sweetened by the addition of ripe plantains or wild honey. 273

GOVERNMENT AND SOCIAL ORGANIZATION

There is no trace of any division in clans or exogamic kinship groups. The tribal organization of these primitive tribes was essentially along democratic lines. 621

In former days the Miskito do not appear to have been ruled by a supreme chief, except during war time, when a commander was chosen by an assembly of the old men, in order to direct the military operations (M. W.: 307). The choice fell generally upon a warrior celebrated for his prowess. According to Exquemelin (French edit.: II, 264) preference was given to an Indian who had accompanied the buccaneers, but with the restoration of peace his authority ceased. 624

In the legends of the Miskito there are records of individuals seizing the powers of government by violence. The insignia peculiar to a chieftainship seemed to consist of a wooden scepter and of a metal breastplate depending from the neck. The powers of the numerous priest-doctors (*sukya*) were also very great, but it is not known just how much they intervened in governmental affairs. It appears, however, that occasionally the temporal and spiritual heads were both centered in the same person. 622 554

Hereditary chiefs did not rule the Mosquito Coast until after the establishment of British influence. One of these chiefs, a Miskito, was later raised to the rank of king; he became a tool in the hands of his foreign protectors, with whose aid his nominal authority was extended over the larger part of the coast. A silver crown and a scepter of little intrinsic value were bestowed upon him by the British authorities of Jamaica. The rule of the Miskito "king" was absolutely despotic. His orders were carried out by his quartermasters (*kwatmas*); the latter carried a cane or staff, which symbol of authority was apparently introduced by the English or Spaniards. A silver medal, sword, or anything else known to belong to the king would also do. Such a token established the credibility of the bearer and an immediate compliance with his orders. Foreign traders also applied to the king for such an object which served as a passport; every Indian was compelled to render him assistance, lodge him, sell him food, and furnish him with the means of continuing his journey, against reasonable pay. That the Indians of the interior did not pay much attention to such commands need hardly be told. 643 648

Besides the king, there were three other important rulers among the Miskito, who governed comparatively large areas and were known as "general," "governor," and "admiral." Numerous minor 624

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624 chiefs, called by the Miskito name *wita* or *wihta* (lit.: "head"), resided in the larger villages.

648 Now the government of the two republics, Honduras and Nicaragua, is represented by *comandantes*, who are invariably Ladinos. Indian *subcomandantes* are occasionally named in the larger areas, but their authority is practically insignificant. Some deference is also paid by the Indians to the elders of the settlements, and especially to the sukya. The officials despatched from Tegucigalpa or Managua are rarely of the better element, and have at times committed great abuses among the timid and peaceful aborigines. They are too frequently men of low morals who try to enrich themselves by imposing fines upon the Indians, which are put into their own pocket, or by compelling the natives to work for their personal benefit.

LAWS: CRIME AND ITS PUNISHMENT

627 ADMINISTRATION OF JUSTICE.—In former days the punishment of criminals was intrusted to the individual wronged rather than to special officers of justice. If the injured person did not take any steps to revenge himself he was considered a coward.

177 692 681 Toward the middle of the eighteenth century, when British influence spread to the "court" of the principal Miskito chief, special officers, known by the name *kwatmas* (from the English "quartermaster") were intrusted with the execution of government orders and the administration of justice. Punishment was inflicted in the shape of fines, flogging, and death by hanging; prisons were unknown. On their periodical visits these officers used to whip all the young people whom they could seize, in order to cure them of their laziness and stinginess, apparently whether they were guilty of the charge or not. This was called "teaching the people" (M.: *upla amalkaya;* S.: *möih sumalnin, möih sumalnaka*) and had the object of inculcating principles of good conduct and morality. An account of such proceedings is given by Bell (b: 278–282).

685 THEFT.—A thief was compelled according to Indian law to restore twice the value of the stolen object.

847 INFANTICIDE.—This was apparently not considered a crime in former days under certain circumstances. (See Children: Their Birth and Education.)

683 BODILY INJURY.—For any bodily injury, whether done intentionally or not, a payment of "blood money" (M.: *tala mana;* T., P.: *a minit;* U.: *awas makalnak*) was collected.

682 MURDER.—A murderer had to follow his victim into death. If he should not do so voluntarily, the relations of the murdered man might kill him without risk of punishment; besides, in that case, his memory would be dishonored. The *lex talionis* was applied rigidly.

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Poisoning is nowadays the usual method of disposing of an enemy. The poison is administered in rum or fermented drinks, with the aid of a third person, when the intended victim is intoxicated. This method of killing has been rather common in recent years. As poison the Indian uses some strong native drugs, alligator gall, or even cyanide stolen from the gold mines. The Miskito from Rio Coco are supposed to make frequent use of poison. If the Indian kills his enemy with the aid of a gun, arrow, or knife, he will have to follow him into death, but such does not appear to be the case when poison has been administered.

ADULTERY.—Morality is at a low ebb, particularly among the Miskito, and most of the disputes and crimes that occasionally take place are the results of quarrels about women. The injured husband inflicts a severe beating on his unfaithful wife or attempts to choke or drown her in order to make her tell the name of the other delinquent, from whom a payment (M.: *mairin mana;* T., P.: *yal minit;* U.: *yal makalnak*) is exacted. Such a "woman payment" consists generally of a cow or a gun. Otherwise wife beating is not common. Occasionally a woman has committed suicide for having received a sound beating from her husband on account of her unfaithfulness, and the latter was then compelled to pay up to her relatives. Bell (a: 251) states that he had known men keeping wives for the sole purpose of the revenue derived from their misconduct.

DEBT.—If a debtor refuses to pay up or to return or refund the object or money borrowed, the creditor might go to his plantation and pay himself with provisions without risk of punishment. If such a debt can not be collected in an amiable way, the creditor, instead of wrangling with the debtor, might destroy some property belonging to a third person. Pressure is then brought to bear upon the debtor and he has to make good the damage done.

VARIOUS.—Sometimes an Indian who had been grossly insulted and was unable to collect payment would commit suicide, whereupon the offender had to do the same. This system led to complicated cases, and the following has been recorded by the Moravian missionaries. A Miskito woman, being continually mistreated by her husband, ran away from him. The latter then proceeded to the house of his parents-in-law, where he was told that his wife, unable to endure his barbarous treatment any longer, had hung herself. The man understood what that meant and committed suicide without hesitation. Then the woman, whom every one had believed dead, returned to the village. But now the relations of her husband wanted her to commit suicide also for having caused the latter's death by her flight from home. As the unfortunate woman hesitated, not having the courage to do what was asked of her, her husband's relations seized her and hung her to the nearest tree.

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628 These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

762 Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

674 There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

157 The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wáikna pain;* S.: *al yamni, al yamka*).

461 All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

157 Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

578 As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

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hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yañ*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

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551 177 These old Indian names have now practically been superseded by Spanish or English names. On the coast English names seem to be preferred, but in the interior nearly all the names are taken from the Spanish language. The Indian generally takes only one name, which may be either a Christian name or a surname; from time to time they change it. A well-known Miskito of Rio Patuca, the owner of many cattle, even took the name "Honduras."

Foreigners traveling on the Mosquito Coast are frequently asked by the Indians to name their youngest child. It is often difficult to find a name which is acceptable to them, as they do not want any which is already found in the region. M. W. (304) tells us that at the end of the seventeenth century the most prominent Miskito all had names given to them by the buccaneers; every one of the adventurers stopping at the coast was asked to give a name to one of the Indians, and the latter thought that the same buccaneer could not well give a name to more than one Indian.

551 The mentioning of a deceased person's name is taboo among all the tribes under consideration, and it is a direct insult to mention it in the presence of his relatives.

551 177 But at no time does the Indian like to be addressed directly by his name. It is therefore often difficult to find out their real name, especially of the women, who are generally known as So-and-so's wife, daughter, mother, sister, etc. In former days this was the case with the men, too, but owing to their working in the mahogany camps, gold mines, and other enterprises, where they had to give their name in order to be distinguished from the other laborers, this aversion has gradually disappeared. While in charge of a mahogany camp on Rio Coco I had great difficulty at first in obtaining the names of new laborers, especially of the Sumu. They would invariably tell me that they were the son of So-and-so, or they gave me the name of the village they hailed from. However, if there were other Indians present one of the latter would promptly answer my question by telling me the name of the particular Indian I had addressed.

601 The series of relationship words, by which the members of a family address each other instead of proper names, is very complicated among the Miskito, and may be replaced by a whole new series when a death occurs in the family. Husband and wife call each other *mayi* "my consort." Before any child has been born to them the husband often calls his wife *kika* "girl," while she calls him *wahma* "young man." After the birth of the first child they often call each other *luhpi yapti* "my child's mother," and *luhpi aisa* "my child's father," respectively. After the death of a child they apply to one another the name *sukrika*. The words *mahma* or *masa* are frequently used to address a son or brother, while *kika* or *misis* are the forms of address for daughter or sister.

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Old men and women should always be addressed as *dama* "grandfather" and *kuka* "grandmother" among the Miskito, the use of their personal names in talking to them being considered very irreverent. 601

Two men or two women may exchange their names, or merely some sort of personal property, in form of friendship, as a pledge of perpetual amity; they then call each other *libra*. This habit is common among the Miskito and is also found occasionally among the Sumu. Such friends are as dear to each other as brothers, and an Indian may trust his wife with perfect safety with his *libra*. 572

SALUTATIONS

Common form of salutation.—Handshaking (M.: *mihta sibaya;* T., P.: *tiñ isihnin;* U.: *tiñ isihnika*) constitutes now the general form of salutation, but this habit seems to be of foreign introduction. When two Indians meet the one will say: "How are you?" (M.: *naksa*, abbreviated from *nahki sma;* T., P.: *parasta;* U.: *yampara*), while the other replies: "I am well" (M.: *âiñhwa sna;* T., P.: *yammi lik yañ;* U.: *yamka yañ*). When they take leave, the Miskito will say to each other *âisabi*, contracted from *âisabya* (for *yawan kli âisabya* "we will speak again"), which corresponds to the Twahka *yulbâudarañ*. The Twahka will, however, more frequently make use of the general form of salutation *parasta* upon separating, whereas their kindred say *kaltaldarañ* (P.) and *kaltalwarañ* (U.), that is "we will see you again." 576

Upon Indians returning from a prolonged absence their female relations will sit down in a corner of the hut, throw a cloth over their head, and begin to cry with a dirgelike song.

Reception of visitors.—There are no communal houses for the reception of strangers; the latter are generally directed to the dwelling of the headman or sukya. Visitors arriving by canoe may give notice of their approach by blowing a conch shell. If a party of Indians arrive at a settlement where the men are absent they do not land unless they have near relations there, but they talk with the women from the canoe. 574

In former days the reception of a stranger or visitor appears to have been of a more demonstrative nature than now. Exquemelin (English edit.: 252), referring to the Miskito of Cabo Gracias a Dios, states that "the host goes a distance of three or four hundred steps out of his hut to receive his guests, and upon their approach he lies down flat upon his face without any motion, as if dead. The guest then lifts him up and together they go to the festival. Here the guests in turn lie down, and the master of the house lifts them up one by one and with his hand leads them into the cottage to a seat." This form has been out of use for many years. Nowadays the host does

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514 not go out to encounter his visitor, but receives him with a handshake in his hut or at the doorway.

Among the Sumu (Twahka and Panamaka) I have observed occasionally that the guest walks into the house of his host without speaking a word. The latter then addresses him with the words *diwana man* "have you come?" to which the other replies *diwana yañ* "I have come." He is then motioned to one of the low wooden seats or to a hammock. The master of the house then calls his wife or daughter to bring him some wabul or other beverage or food. If the guest is well known to the women they will decry the drink or food offered, while the guest is supposed to praise it. If they do not know each other the wabul is brought without the exchange of a single word. The visitor is never questioned while he is eating, as that would be a breach of etiquette. When he has finished with the food the master of the house will inquire where he comes from and what brought him to his dwelling. He generally asks him also if he saw plenty of game on his journey and if the latter is lean or fat. When the visitor departs he merely says *yawa yañ* "I am going," and he goes, while the host replies, almost laconically, *yawa man* "are you going?"

201 KISSING.—Among these Indians kissing is absolutely unknown. They manifest their affection by merely smelling the scent of the other person, rubbing their nose against the latter's cheek with a snuffing action; this custom prevails in large areas of the world. Parents rub their nose against the face, neck, or body of their baby, inhaling the scent as in snuffing, but they never touch the child's skin with their lips. The words "to kiss" or "to smell" are translated by the same phrase (M.: *kia walaya;* T., P.: *waya dakanin;* U.: *wiñka dahnaka*), which literally means "to hear the scent." Among the Sumu (and the neighboring tribe of the Rama as well) our manner of kissing is abhorred and looked upon as a mild form of cannibalism.

TIME RECKONING

211 PYU OR PERUVIAN QUIPU.—Primitive forms of the complicated *quipu* of Peru are in existence among both Miskito and Sumu. They consist of a single cord with knots and are called *pyu* or *piu* (S.: *ma*), a word which is etymologically related to *quipu*. When the Indian departs for a voyage he gives his wife a string or cord with as many knots therein as the number of days he expects to be absent, each knot corresponding to a day. The woman severs one of these knots every night, and in this manner she knows at a glance at the *pyu* how many days her husband will still be absent, for the latter arrives, if well, on the very night on which the last knot is cut off. When

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the Indian is working as a day laborer he will keep track of his time by tying a knot in a string every evening, and finally compares the total of the knots with the amount of days credited to him by his employer. These small cords also take the place of cards of invitation for a great festival. One of them is carried by the messenger to the headman of each one of the invited villages. Each night one of the knots is severed, the last one representing the day of the meeting.

Instead of knotted strings there are also other systems of *pyu*, as, for instance, tablets or pieces of wood on which notches have been cut with a knife, or wherein small holes have been drilled for the reception of thin sticks. The women also make use of calabashes in which they place or from which they withdraw a small pebble every day. Each one of these notches, sticks, or stones signifies a day.

The presence of these simplified *quipu* among the Miskito and Sumu has already been observed by Roberts (270) and by Sapper (c.: 265). Similar systems may be found among the Talamanca tribes of Costa Rica and in many parts of South America and Oceania. Very complicated systems are known only from the ancient Peruvians; in their elaborate *quipu* the knots varied in value according to their coordinate placing. They were used for calendary calculations and also for statistics.

DAYS.—Great distances from one place to another are expressed by the number of "sleeps" or nights that one will have to sleep on the journey.

The approximate time of the day is not observed from the length of the shadow, but directly from the position of the sun. The Indians will point to the heavens and indicate the approximate position of that celestial body at the time at which a certain action took place.

YEAR.—The Indians calculate the year according to the return of the dry season, or summer; both the words "year" and "dry season" are expressed by the same word (M.: *mani;* T., P.: *kure, kuri;* U.: *mamaka*). The approach of the rainy season, or winter (M.: *li mani, li tdim;* S.: *wasma*), or the dry season, is known from the behavior of the animal and vegetable world. Very few Indians are able to give their approximate age. The great eruption of the Cosegüina in 1835 formerly afforded a convenient reckoning period to start from.

MONTHS.—The year was formerly subdivided into 13 months or "moons" (M.: *kati;* S.: *wdiko*) of 29½ days each, corresponding to the average duration of a lunar revolution. As it was known, however, that the solar year corresponds to considerably less than 13 lunar revolutions, the thirteenth month was occasionally dropped in order to keep the moon in adjustment with the seasons. Nowadays

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805 the year of 12 months has been adopted. The names of the latter are the following:

Month	Miskito	Twahka and Panamaka
January	*Aladi kati* "New Year's Day month"	*Aladi wĕiniko.*[1]
	Mani raya kati "New year month"	
	Inupu kati "guácimo (bastard-cedar) month."[2]	*Inipu wĕiniko.*
February	*Kuswa kati* "tortoise month"	*Kowa wĕiniko.*
	Islu kati "garrobo (or ishwilly lizard) month."	
March	*Kakamuk kati* "iguana month"	*Kama wĕiniko.*
April	*Wli wĕinika kati* "male-turtle month"	*Wili almuk wĕiniko.*
	Kut prĕidi kati "Good Friday month"	
May	*Wli mĕirin kati* "female-turtle month"	*Wili yal wĕiniko.*
	Pisba kati, tisba kati "masica (or breadnut tree) month."	*Pisba wĕiniko.*
June	*Lá kati* "rain month"	*Wasma wĕiniko.*
	Pupu wihta kati "Pleiades month"	
	Yahurus kati "wild-cane month"[3]	
July	*Pastara kati* "high-wind month"	*Dapa wĕiniko* "wild-cane month."[3]
August	*Sikla kati* "sikla month"[4]	*Sikla wĕiniko.*
September	*Wis kati* "wis month"[5]	*Tiwis wĕiniko.*
October	*Sdût kati* "south-wind month"	*Saut wĕiniko.*
	Prari kati "hurricane month"	*Prari wĕiniko.*
November	*Yahbra kati* "north-wind month"	*Yahbra wĕiniko.*
December	*Krismas kati* "Christmas month"	*Krismas wĕiniko.*

[1] *Aladi* is corrupted from the English "holiday."
[2] This tree flowers in January.
[3] The wild cane flowers in June or July.
[4] A migratory bird which arrives in August.
[5] A migratory bird which arrives in September; it is a species of flycatcher (*Tyrannus intrepidus*).

The behavior of the elements, the opening of certain flowers, the maturing of certain fruits, the song of certain birds, and the spawning time of certain animals, each in its season, are thus the almanac of the Indians.

802 NUMERATION.—The numeral system is vigesimal, but in Honduras both Miskito and Sumu count by tens also (vide Conzemius, d:81–82). High numbers are now generally expressed in English or in Spanish but in former days this was done by the word "many, much" or by a handful of sand or hair.

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MUSICAL AND SIGNALING INSTRUMENTS

The music is chiefly instrumental; vocal music is seldom heard, and is chiefly performed by the sukya in practicing his incantations. 533

DRUM.—Our common drum, known by its English name (M.: *drum;* S.: *durum*), is the favorite musical instrument among the men; it has been extremely popular ever since its introduction by British garrisons during the eighteenth century. The Indians make it themselves and beat it at their drinking bouts with the aid of the wooden drumsticks (M.: *mihta;* S.: *tiñni*). 534

The horizontal hollowed-out log drum with an H-shaped cutting made longitudinally (the *teponatzli* of the Mexicans and the *tunkul* of the Maya), which is used for signaling purposes in different parts of America and Melanesia, appears to have been unknown in the region under consideration. The common drum is sometimes used to advise the neighbors of a misla feast.[61] [202]

The upright native drum (M.: *kuñbi, kuñbaya;* S.: *pañtan, panatañ*) is goblet shaped and hollowed out from a solid block of mahogany or cedar; it has a height of about 3 feet at least, including the pedestal base, which is carved from the same block of wood. The smallest diameter is at the bottom just above the pedestal support. The drumhead at the top is formed by a piece of animal skin (deer, toad, iguana, or tapir); it is held taut by means of a strong rope which is attached to the pendent edges of the skin and firmly tied to the shell of the drum. It is beaten with the hand and used only at the festival of the dead. This instrument corresponds to the *huehuetl* of the ancient Mexicans.

RATTLES.—Round or egg-shaped gourd rattles, the common playthings of our babies, figure among the musical instruments of the Mosquito Coast, and are found in use all over the New World. They are handled chiefly by the women, particularly at the festivals of the dead, in order to mark the measure at the dances. These rattles are made from the fruits of the calabash tree, from which the pulpy contents have been removed through a circular opening at the stem; small stones, pebbles, hard seeds, or beans are then introduced. Finally, a close-fitting stick, which acts like a handle, is introduced; it tapers somewhat toward the distal end, which is thrust entirely

[61] The foreigners living on the Mosquito Coast jokingly use the phrase "bush telegraph" to refer to the rapid way in which news sometimes travels, but there is no such mysterious way used by the Indians. It is claimed that the Miskito living on the savanna near the sea occasionally spread news by the signal of making a savanna fire. But such a signal could not be very definite as these fires are generally kindled for no purpose but to burn the grass and low thicket. Sometimes men from villages far apart come within shouting distance of one another when hunting. It is also claimed that some men have a "whistling language," and are able to communicate any sentence correctly by whistling. [198]

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534 through the shell, emerging through a small hole cut just opposite the stem end. With other specimens the handle does not pass through the calabash, but it is firmly attached to it by means of fiber strings passed through various perforations drilled in one end of the gourd. The seeds strike the inner wall of the thin shell and the central handle axis, resonating somewhat like castanets.

WIND INSTRUMENTS.—Flutes or flageolets (M.: *bra;* S.: *bara*) are in common use. They are about a foot in length, and are provided with two, three, or four finger holes. Beeswax is applied to the mouthpiece. They are made from a species of bamboo known by the Miskito name *bratara*.

Short 1-toned flutes are also made from the femoral bones of deer, tapir, or other large animals. They are used to lure the agouti by imitating the voice of that rodent, and from the purpose they serve are called *kyaki wasbaya* (M.), *malka kuñnin* (T.), *malaka kuñnini* (P.), or *malka kuñkana* (U.).

Several flutes are used exclusively at the festivals of the dead. A small flute (M.: *limi-mina, limi-dusa;* S.: *nawa-wakal*) is made of jaguar bone and has the mouthpiece covered with beeswax. Another short flute (M.: *yul*) is made from the thin *klisan* reed. Stout bamboo flutes, measuring up to 6 feet in length, with one end resting on the ground, are blown by the sukya. This instrument has a mouthpiece of bird skin and beeswax and has a number of lateral ventholes; it produces a loud noise not unlike the roaring of wild beasts.

Panpipes are unknown in the country under consideration. Pottery whistles are no longer manufactured, but a few specimens have been unearthed in the Rio Tinto (Honduras) region.

Conches (M.: *kiptaya;* S.: *masi*) are used as trumpets throughout the Mosquito Coast.

Jew's-harps (*yusap*) were introduced many years ago and are in great favor; they produce but few tones, but the music sounds sweet and soothing and has a great charm for the Indians.

MUSICAL BOW.—The musical bow (M., S.: *kuñku*), the only stringed instrument known in ancient America, produces a plaintive sound and is occasionally played by the Indian women. It is formed of a small wooden bow, chiefly of split bamboo or other tough pliable wood of 2 to 3 feet in length. Both ends of the bow are connected by a thin string of pita or silk grass. The bow is pressed against the mouth, which acts as resonator, and the string twanged by means of a pick of wood. Harrower (47) collected a large specimen on the Mosquito Coast in 1924 with a gourd for a sounding box and a string made of a heavy liana.

534 171 More complicated systems are found in other parts of Central America, but practically always among the Indians. In 1919 the writer saw at Ocotal (Nicaragua) one of these instruments in the

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hands of an Indian from the neighboring village of Cuje, who called it "quijongo" or "sambumbio." It was at least 5 feet in length and 1½ inches thick. A little from the center the string was tied back to the arc with the aid of another thread, so that two strings of unequal size were formed. This instrument could produce a great variety of tones. In Olancho (Honduras) I saw later a bow of equal size but with a calabash resonator; it was called "caramba" there. The gourd was fastened with the mouth downward at the convex surface of the arc, at the same point where the cross string had been attached to the wood, that is, about one-third the distance from one end. The Rama of Nicaragua also call this instrument *lutiko*, while among the Lenca of Honduras it is known as *bumbum;* it is also found among the Kekchi of Guatemala, and was known to the Island Carib of the seventeenth century, according to De Poincy.

In spite of the fact that in Central America the musical bow is limited to the pure Indians, it is supposed to be, like all other stringed instruments, of foreign origin. The various names by which it is known in Central America savor of African origin. It is also found in certain regions of South America and has a wide distribution under different forms in large areas of Africa and Melanesia.

OTHER INSTRUMENTS.—Violins, guitars, accordions, and harmonicons may be found in certain regions; they are chiefly of German manufacture. Instead of beating the drum or shaking the rattle, the Miskito occasionally clap the hands together at the dances in order to obtain a rhythmic effect.

AMUSEMENTS: SONGS, DANCES, STORY-TELLING, GAMES, AND SPORTS

SONGS.—The Sumu rarely sing (M.: *diwanaya;* T., P.: *diwannin, diwannini;* U.: *unbdinaka*), but the Miskito sing occasionally when they are either sad or happy. All their songs are soft and plaintive, and they all sound alike to the stranger, who is unable to distinguish the gay songs from the sad ones, unless he has lived some time among the Indians. The sukyas of both tribes sing upon practicing their rites of incantation, but owing to their intermingling of many old and obscure phrases, these songs are unintelligible to the other Indians.

I was unable to collect any indigenous song, but Young, Fellechner, and Bell have been more fortunate than I. In these songs appear many phrases not used in general conversation. Fellechner (268) obtained a number of songs which were apparently composed in an antique form of the Miskito language, for the interpreters were unable to give the meaning of many parts of them. Most of this material has never been published. The following specimen is that

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539 of a Miskito from Cabo Gracias a Dios upon going away and leaving his sweetheart behind; it is given in German and Miskito (Fellechner: 268):

I will go far away from you,
Very great is my sorrow.
I am going to get beads for you,
Cloth will I bring back.
The east wind is blowing strong;
Your name I will sadly call.

The following song is found by Young (77–78) in English and Miskito:

Dear girl, I am going far from thee.
When shall we meet again to wander
Together on the sea side?
I feel the sweet sea breeze
Blow its welcome on my cheek.
I hear the distant rolling
Of the mournful thunder.
I see the lightning flashing
On the mountain's top,
And illuminating all things below,
But you are not near me.
My heart is sad and sorrowful;
Farewell! dear girl,
Without thee I am desolate.

Here is another specimen of a love song, recorded by Bell and published by him in English (6: 89) and Miskito (6: 312):

My girl, some day as you walk with your companions,
When the mist settles over the river mouth,
And the smell of the pitch-pine woods comes from the land,
Will you think of me and say:
"My lad, have you really gone away?
Alas! my lad, have I seen the last of you?
Shall I really never hear your voice again?
Alas! alas! alas!"
My girl, I am very sad for you,
I remember the smell of your skin.
I want to lay my hand on your lap,
But here I am lying under a tree.
In my ear I only hear the noise of the sea.
The surf is rising in the offing;
But I cannot hear your voice.
Alas! alas! alas!

Bell (b: 301) gives the following English version of a dirge, sung by the Miskito Queen-Dowager on Rio Coco upon the return of her daughters, who had been for some time at Bluefields:

Oh, my children, you have come back to me;
I was lonely without you.
Other women had their children. I saw them,
And my heart was sore with longing for my daughters.

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In the night I thought of my dead boys;
They called me "Mother!"
I thought I was alone, and had no children.
I remembered my daughters,
But they were far away among the white people,
My children have come back.
My heart is like the young plantain-leaf,
That shoots out when the sun shines.

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DANCES.—Dancing (M.: *dans pulaya*,[42] T.: *dans pulnin;* P.: *abanini, danis pulnini;* U.: *abanaka*) is practically limited to the various festivals and had perhaps originally a religious significance. Certain rejoicings of the Miskito, at which dancing takes place, are called *li-siksa* (lit.: "black water"), and others are known by the name *plamana;* the latter are celebrated in honor of some one who is leaving for a long journey.

The women perform individual dances which do not lack a certain grace; they place the hands upon the shoulders or the head and make various contortions of the body as they walk or jump around.

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Some dances of rejoicing have been introduced by the Negroes or Creoles, and are performed chiefly around Christmas, which is considered a period of merrymaking by all these Indians, whether evangelized or not. The festivities last about two weeks. A great circle is formed with men and women alternating and joining hands or placing the right hand upon the left shoulder of their neighbor; in the center are seated one or two men beating drums, and at the rhythm the circle moves around.

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STORY-TELLING.—The telling of stories is one of the favorite ways of passing the long hours at night before going to bed. The old Miskito, who lived under the good old days of the "Mosquito Kingdom," are always glad to talk of their armed expeditions into the "Spaniard's" country (Honduras, Nicaragua, Costa Rica), and to relate some bizarre exploits in connection with those wars. The Indians can relate an occurrence in the most animated manner, but they do not seem to invent tales or stories as do the Negroes.

When the Indian has returned from a hunting or fishing expedition he delights in giving a most detailed account of everything he noticed in the course of the day, even if nothing out of the ordinary occurred. He will give all the particulars regarding the game he saw, and relate in a most tedious manner how he succeeded in outwitting it and getting within gunshot of it. The narrator may keep on in this manner for hours, while his patient listeners occasionally interpolate an exclamation denoting their astonishment, surprise, doubt, agreement, or comprehension.

[42] The word *dans* or *danis* is taken from the English.

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539 Occasionally the old men tell about mysterious tribes which formerly inhabited the country. The following account of the Wiswis Indians was told to me in 1918 by the Miskito Ramón of Burimak (upper Rio Coco):

THE WISWIS LEGEND.—On the left bank of Rio Coco, near the present settlement of Saulala, there used to live a subtribe of either Miskito or Sumu.[62] Having once killed a great number of *wiswis* birds, they become known by the latter name. They refused to pay tribute to the king, and for that reason the latter treated them cruelly, and had them whipped frequently.

One day, while they were out hunting, they killed a number of wild hogs (*wari*), and cut some withes of a variety called *dar*, in order to tie the legs of the animals together and secure the latter on their backs. As soon as they had fastened the withes they could not see the peccaries any longer, although they were able to smell and to feel them. One of them then untied the withes and immediately the animals became visible again. This Indian then tied one of the withes round his own neck, whereupon his companions could not see him any longer. They now realized that the *dar* withe has the property of rendering invisible anything tied with it.

The Wiswis were glad of having made this discovery, and they decided to put it to practical use. When they heard of the king's envoys coming in order to collect the taxes they tied some of these withes round their houses, and the tax collectors were unable to find them or even locate their villages.

In spite of this sorcery the Wiswis were unable to escape the wrath of the king. In order to get away from their oppressive ruler they emigrated toward the interior, wandering overland through the vast savanna, which extends on the left bank of Rio Coco uninterruptedly to Rio Kahka (above Auasbila). From this latter place they are said to have reached Bocay eventually, but no one knows how; some claim, however, that they crossed over to Honduras.

Two rows of little cairns, which stretch in a straight line from Saulala to Rio Kahka, are attributed to the Wiswis. The latter are supposed to have placed them on both sides of their road during their long march inland. These tumuli are from 10 to 16 miles away from Rio Coco; from the village Auasbila it takes about half a day's march to get to them. They are still known among the Miskito by the name *Wiswis kawan* "placed by the Wiswis."

524 GAMES AND SPORTS.—The little boys play war and hunting games with toy bows and arrows; the latter are tipped with a wooden knob or with beeswax. Kites (M.: *istapla*), spinning tops (M.: *purmaya*,

[62] Lehmann refers to the *Viviss* as a cannibal tribe of unknown origin, which settled at the Mosquito Coast about the twelfth century. These people finally departed, but no one knows whither (Lehmann, b: 716; c: I, 463).

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purwaya), stilts (M., S.: *umas*) and marbles may occasionally be seen; the spinning tops may be of foreign manufacture, or they are made by the Indians from large seeds through which a stick has been passed. String puzzles or cat's cradle, a common game of our schoolboys, has been observed by the writer among both Miskito and Sumu, but unfortunately he neglected to record any of them. Already Wickham (b: 160; c: 207) records "scratch cradle" among the Sumu of Rio Siquia and notices very rightly that these Indians carry it into far more complicated passages than we do. 524

Hide and seek is known, and the "tiger game" is especially popular. In the latter, one of the boys is supposed to represent the tiger, that is the jaguar or the puma, and he hops around on all fours, imitating the gait and voice of that feline. The other children stand in a file, each one placing the hands upon the shoulders of the one in front of him. The biggest boy is leading while the smallest one is at the rear end. The "tiger" attempts to catch one among the row, but the boy in front outwits him by dashing immediately to the threatened spot. All the time the group keeps on calling "tiger is coming" (M.: *limi dula;* T., P.: *nawa kâiwe;* U.: *nawa waya*).

Another game, called *wli pulaya* "playing turtle" is described by Bell (b: 151) as follows: "One boy is chosen as the turtle, and swims away to a fixed distance from the rest; then at a signal, he dives, and the other boys try to catch him. As the water of the (Bluefields) lagoon was usually a little muddy from the dashing of the small waves on the half-mud, half-sand of the beaches, it was not easy to see the diving boy in, say, 5 feet of water; besides which they were skillful divers, and could keep long under water. The boy dives to the bottom, and keeps to it. Drawing up his right leg, he buries his toe in the sand, and kicks out violently, sending his body flying along the bottom, to rise finally to the surface in some most unexpected position. The 'turtle' waits to rest till his pursuers are too near, then dives again, and possibly shoots between them, rising to blow far behind them. Finally the 'turtle' is caught and brought to the captain or quartermaster (*kwatmas*) of the boys, who is supposed to kill it by slapping with the palm on the top of the head."

In another game, called *ilili pulaya* "playing at shark," the diving boy, representing that fearful fish, stealthily dives among the others, and pinches or bites them under water. This is a favorite game, which fun and fear combine to make very exciting (Bell, b: 152).

Wickham (b: 160; c: 200–201) states that the Ulwa of Rio Escondido "have a singular mode of playing with staves or short poles, which they grasp in the middle, and then, standing opposite each other, holding them at arm's length, strike each end alternately together with all their force. The opponents are matched in pairs, and in appearance it rather reminds one of the old English quarter- 526

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526 staff play. The object of the game is to see which can keep up longest the continual strain upon the muscles of the arm, and ultimately strike the staff from the hand of the other."

HYGIENE: DISEASES AND THEIR CURE

515 Most of the Indians keep themselves very clean and take a bath twice a day in the river adjoining their settlement. As they wear but little clothes this is a very simple operation with them; they keep their body cleaner than do the lower class of the Ladinos, or of the white race in Europe, where the clothes are frequently the main source of dirtiness.

514 When the Indian goes to stool he always takes to the water, drifting down the river until he comes to a secluded spot, where he can perform this operation in privacy. When finished he cleanses the body with water.

515 The presence of dogs and pigs in the huts is responsible for the great quantity of fleas to be found there. In spite of the great care devoted to the hair, the latter is frequently full of vermin, and it is not an uncommon occurrence to see at the villages rows of women picking off one another's lice and crushing the troublesome insects between the teeth—a most disgusting sight.

164 MALARIA.—A swelling of the spleen and anemia are common enough and are undoubtedly the result of malaria (M.: *wrih;* T.: *ware, warai;* P., U.: *yama, yamah*),[84] which is endemic in the lowlands, although rarely fatal. The transmitting agent of malaria is a mosquito of the genus *Anopheles*, which is very common.

751 For malarial fevers infusions from the bark of certain trees are administered, especially that of the copalchí (*Cinchona* sp.). Instead of sudorific bush medicine, quinine is also administered nowadays. The fever or lemon grass (*Andropogon nardus* L.) is also used for this purpose. The sudorific is followed by a steam bath. The stricken person is enveloped in tunu blankets, and water is thrown on some large heated stones placed at his feet; he then inhales the thick vapor or fumes produced thereby. This part of the treatment is excellent, for it induces perspiration; but as the patient is then taken to the riverside and forced to take a cold bath pneumonia is often the result.

Among the Sumu the patient is carried to one of the numerous hot springs (*daka*) which abound in their territory, and immersed therein, or he is buried up to the armpit in the hot sand at the edge of the pool.

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[84] These names were formerly used by both Miskito and Sumu as a general term for most other maladies, but nowadays the Miskito have adapted the word *sikwis* (Engl. "sickness") in the latter sense.

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SKIN INFECTIONS.—Cutaneous infections are very common in certain regions, a fact already recorded by Exquemelin (French ed.: II, 277), who visited the Miskito of Cabo Gracias a Dios; they are the result of ignorance of the most elementary principles of hygiene. 164

A certain skin disease, which starts by a burning or swelling of flesh, is said to be caused by the urine of an insect, which, like the disease itself, is called *mastukra* by the Miskito. [753]

A specific ulcer, resembling cancer, and known locally by the name "bay-sore" (M.: *lasa krūnisa* "the devil is boring"; S.: *pilau, tamak*), is sometimes caught by Indians and Negroes. It breaks out on face, arms, and legs, and is generally attended with very acute pain. It is cured by powerful caustics, or applications of a corrosive nature. The common ulcer, abscess, or carbuncle is called *yukri* (M.) and *suru* (S.).

Various other bad skin diseases may be found in certain regions; they are known by various names (M.: *yats, kliñklin, kuswa-dūya;* S.: *una*).

A cutaneous affection, sometimes taken for leprosy (which is rarely met with), is very common among both tribes. It is known by the names *bulpis* among the Miskito and *mara* among the Sumu; the Spanish-speaking Central Americans call it "bienteveo," "carate," and "mal del pinto." It occurs in white, red, and black blotches; for that reason the Ladinos refer derisively as *gente pintada* "painted people" to the ones afflicted with this disease.

Ringworm (M.: *sus, sihiri, bulpis twaknira;* S.: *mara pūi, mara titis*) is also met with among the Indians. Small warts (M.: *sisrama;* S.: *titismak*) also occur on the hands.

Painful sores may also be caused by the jiggers or chigoes (*Sarcopsylla penetrans*), a sort of flea, which is very common during the dry season but disappears gradually at the beginning of the rainy period. This insect lives on the ground and is especially common around the dwellings where pigs are allowed to roam. It burrows itself under the skin and toenails of man and animal to deposit its eggs. If the latter be taken out immediately with a disinfected needle or the point of a knife, the wound will heal without further care.

Minute ticks cover every bush during the dry season. They fix themselves to the body of man and animal and bury their head in the skin. Sometimes they cause painful inflammations.

YUMU, OR STOMACH ACHE.—This state of ill being is very common among the Miskito and appears to be merely some sort of indigestion due to overeating. The Indians believe that it is caused by the spirit of an animal which has entered the body of the sick person. This may have taken place by eating a piece of the animal in question, or by being scared at the sudden appearance thereof, while being out in the bush. Thus if the agouti (kyaki) has caused the ill the latter 164 753

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will be known as *kyaki yumu-ka*. The Sumu have apparently taken this belief from the Miskito, and they have no distinctive name for the ill; the Rama of Nicaragua call it *yakuki*.

The sukya cures this illness after its source has been revealed to him in dreams, for the treatment differs slightly according to various animals which have caused it. But in all cases the belly of the patient is strongly massaged with animal grease (also vaseline, coconut oil), while the sukya keeps on continually a low whistle in order to induce the spirit to depart. Among the Christianized Miskito there are also some people who heal *yumu* by similar methods; they are known as *yumu yabaka uplika* "people curing yumu."[86]

Women *enciente* may occasionally suffer from *kwihra yumu-ka* "pregnancy yumu"; the child is supposed to die then invariably, unless the sukya applies a treatment.

OTHER INDIGENOUS DISEASES.—Dysentery (M.: *taldura;* S.: *ba-pau*) occasionally appears in the form of an epidemic; it is generally cured by the administration of an infusion from the bark of the nance tree (*Byrsonima crassifolia* H. B. K.).

To cure diarrhea (M.: *byara plapaya;* T., P.: *ba lanin;* U.: *bawas lanaka*), the favorite remedy is an infusion prepared by boiling the bark of the mountain guava tree or the seed of the zapote or monkey apple. The Sumu also boil the rootstock (M.: *labu;* S.: *sara*) of the black or Ulwa banana.

According to the investigations carried on by the Rockefeller Foundation, hookworm is found on about 75 per cent of the Indian population living around Matagalpa. There is no doubt that it is also common among the Indians of the Mosquito Coast. Hookworm is seldom fatal, but there is progressive anemia and frequently interference with mental and physical development, causing occasionally premature death.

Children especially seem to be infected with intestinal parasites, as may be seen from their color and their enormously swollen belly; this is largely due to their habit of eating earth, charcoal, and the like.

Rheumatism (M.: *kyaia lāūwaya, dusa lāūwaya;* S.: *wakal dalanin, wakal dalanaka*) is supposed to be caused by thorns or fishbones which have been introduced into the flesh by evil spirits. The sukya pinches and kneads the afflicted spot, then makes a small incision with a glass splinter and, applying his mouth to the wound, he sucks a little and finally produces a prickle or bone, which he had carefully hidden between his teeth.

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[86] Zlock (162) gives *yumuk* as the Miskito name for a native doctor curing with medicines. In the Carib dialects of Surinam and adjacent regions *yumu* is the name for some sort of spirit.

[i.e. yumu, or stomachache, see cat. 116, PA119-20 – Analyst]

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Wickham (b: 160–161; c: 205) states that the Ulwa used to cure pains in the limbs by flogging the aching part with a kind of nettle, until the skin became raised in bumps.

A disease of the eyes, perhaps trachoma, called *ūkri bāikan* by the Miskito, is prevalent; it does not produce total blindness, but causes great pain. Foreigners appear to be immune to it.

Venereal diseases, as syphilis (M.: *māirmanka;* S.: *pildū*) and gonorrhea (M., S.: *iskadora*), are only met with in the larger villages at the coast. Anthropologists and the medical world seem, however, to agree now that syphilis is of American origin.

Yellow fever likewise is undoubtedly of New World origin, and was formerly endemic in certain parts of the Central American lowlands. In the sparsely populated country under consideration, however, no authentic case of yellow fever has been recorded. Perhaps the transmitting agent, a species of mosquito (*Stegomyia fasciata* syn. *Aëdes* sp.), is absent. Black water fever is also unknown. Leucorrhea is, however, very common. Indians suffer seldom from hemorrhoids (M.: *slabla dāiwaya;* S.: *sarani putulnin, saraka putulnaka*), which swelling is prevalent among whites residing in the country.

FOREIGN DISEASES.—Europeans have introduced among the Indians a number of distressing maladies formerly unknown to them, and against which they had not the slightest immunity. Although strong and robust, the Indians are especially subject to infections by the germs of diseases generated by large communities.

Epidemics of our common catarrh (M.: *syahka;* T., P.: *ohdana;* U.: *naūtak iwanaka*) have occasionally caused great havoc among the Indians of the interior.

Whooping cough (M.: *ikya;* S.: *duk*) appears occasionally as an epidemic among children, whereby many of them die.

Influenza or grippe also occurs periodically as an epidemic. It seems to have been brought to the country for the first time in 1807–08 by some Miskito returning from the logwood and mahogany camps of British Honduras. Consumption is also found sometimes, especially among the Sumu.

Measles and smallpox were brought to the New World by the first conquistadores and facilitated the subjugation of the Indians. Epidemics of measles (known by the Spanish name *"sarampion"*) are responsible for many deaths; this disease was already observed at Cabo Gracias a Dios among the Miskito during the latter half of the seventeenth century (Exquemelin, French ed.: II, 277). Smallpox has on different occasions decimated entire villages, but since the middle of the nineteenth century has not appeared on the Mosquito Coast. Wickham (b: 204–208) gives an account of the last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

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000 last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

752 SNAKE BITES.—Guaco (*Mikania* sp.) is one of the various plants used as an antidote to the virulence of snake bites, not only by the Indians but by the Ladinos and Creoles as well. In order to neutralize the venom, the sukya also administers an infusion prepared from the bark and leaves of a leguminous shrub or small tree, called *daka*, while the *brum sirpi* weed is applied externally. The patient must abstain from eating food of which snakes are supposed to be fond. A woman *enciente* must under no condition be seen by the patient, otherwise the latter will die.

278 BUSH MEDICINES.—The Indians know a great number of bush medicines (M.: *sika;* T. and P.: *panbas, panabas;* U.: *dibasta*) for external or internal use. Many native plants and trees are employed, the bark, roots, leaves, and seeds being utilized. The white, delicious resin of the copal or incense tree (*Protium* sp.), copaiba balsa (*Copaifera officinalis* L.), Peru balsam (*Myroxylon pereirae* Klotzsch syn. *Toluifera pereirae* Baill.; M. and S.: *bakus*), the gum of the locust tree (*Hymenaea courbaril* L.; M.: *lâua, laka;* S.: *tipi*), ipecacuanha (*Uragoga ipecacuanha* or *Polygala costaricensis*), sarsaparilla (*Smilax officinalis*), and unguents prepared from the oils extracted from the seeds of various trees are employed in the treatment of certain infections and sores.

The yellow milk of a small tree, known locally as "samboo gum" or "leche baría" (M.: *samu;* S.: *pâumaha*), is applied in poultices for rheumatism; it is also said to cure the *bulpis* skin disease, when the latter is still in its first stage.

The seeds of the piñon (*Jatropha curcas* L.; M. and S.: *pisik*) and the antidote bean (*Fevillea cordifolia* L.; M.: *mukula;* S.: *mula*) are administered as an emetic and as a purgative. The medicinal properties of the castor-oil plant (*Ricinus communis* L.; S.: *unapalan*), which grows wild on the river banks, are well known. De Candolle, however, believes this plant to be of Old World origin; curiously enough, the Miskito have no native name for it.

Toothache is cured with the milk of the cachito tree (*Tabernaemontana donnell-smithii* Rose; M.: *buksa makóra;* S.: *wako*); the latter is also used for skin troubles.

An ill-smelling herb reaching about a foot in height and known as fit weed (*Eryngium* sp.; M. and S.: *kiesûri*) is used for snake bites and epileptic fits. The Ladinos call it "culantro" (coriander) and use it as a condiment, but it must not be confounded with the true coriander (*Coriandrum sativum* L.), which is cultivated sometimes in Central American gardens under the name "culantro de Castilla."

The roots of the cerrón cantil or baraja (M.: *sus sûka;* S.: *tata, daka, tisliñ*) enter into remedies for venereal diseases. The bitter-

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wood or hombre grande (S.: *wanabaka*) is said to be efficacious in case of snake bites. 378

The woody rootstock of the China root or cuculmeca, a sort of French brier (S.: *samalči*, *wasalanaka*) is boiled in water and the decoction is used to clean the blood, and as a preventive against snake bites.

The small "beans" contained in the pod of the pissabed or frijolillo shrub (M.: *siñsiñnya*) are toasted, ground, and used as coffee on account of their diuretic properties; the root of this plant is employed in malarial fever.

The large round leaves of the cowfoot or Santa Maria bush (M.: *sikatara*; S.: *kalamata*) enter into poultices for a swelling of the flesh, while spider webs are applied to wounds in order to stop bleeding. Wild honey is also used in medicine.

PRESUMED CAUSE OF DISEASES.—The cure of the sick is practically always left to the sukya; the latter is generally a clever herbalist, and the treatment applied by him is often excellent, but the remedy in itself is considered of no avail unless certain rites are observed by the healer as well as by the patient. 756

According to these primitive people, indigenous diseases and accidents are always due to the agency of some evil spirit (M.: *lasa*; T., P.: *walasa*; U.: *nawal*) under whose power the sick person is supposed to be. The mischief-maker may send a snake or a jaguar to harm the intended victim, or cause a tree to fall upon him, or cause his canoe to upset, or bring about some other calamity and ill luck. Thus toothache is supposed to be caused by a worm (M.: *sūkri*, *sisi*) that has been sent by these evil powers to bore the tooth. People walking in their sleep are said to be possessed by demons. Epilepsy is also caused by the temporary possession of the individual by such evil spirits; hence fits are called by the Miskito *wlasa prukaya* "to be beaten by the devil." For the cure of this disease a decoction prepared from the *kisauri* herb is said to be very efficacious. 753

This evil influence may be counteracted through the agency of the sukya who manages to exorcise the spirit from the sick and then brings about a complete cure.

DIAGNOSIS.—Through the use of narcotics, especially the excessive use of tobacco, the sukya throws himself in a condition of wild ecstasy, and goes into trances and hypnotic states. During such an abnormal condition he is supposed to be in relation with friendly spirits whom he had invoked previously, and who reveal to him the source of the illness and the mode of cure. 756

HEALER'S INSIGNIA.—The insignia or kickshaws of a sukya during a cure are three or four black hardwood sticks with carved heads and several magic stones and dolls or manikins of white tunu cloth. Stone axes, which are regarded as thunderbolts, figure also among the

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paraphernalia of these doctors, small specimens being considered more efficacious than large ones. One of these celts is wrapped around the aching part of the body in order to relieve pain. In case of stomachic troubles the sukya administers drinking water wherein such a celt had been deposited for some time.

TREATMENT.—The sukya heals generally in the dark, especially after sundown. His methods of approach are prescribed by custom. First he imposes a general fast or perhaps only minor restrictions in diet on the patient, and occasionally on some of the latter's near relations likewise. Food which the patient is allowed to eat is known as *byñnka* (M.) and *kuñ* (S.). Sometimes the sukya ties a knotted cord round the legs, arms, breast, or neck of the patient, and the latter must abstain from the use of certain food, from salt and chili pepper, and observe continence for as many days as there are knots in the cord.

The cure proper consists in whistling over the sick person, blowing tobacco smoke over him, and massaging and sucking the afflicted body parts. The sukya purifies the drinking water, or any other beverage intended for the patient, by exposing it to the dew for some time, and then blowing into it with a bamboo rod or a tobacco pipe so as to produce bubbles. Painted sticks of hardwood are stuck in the ground around the bed of the sick person in order to keep evil spirits away. The sukya walks or dances around the sick bed, singing or muttering mysterious and incomprehensible words which are supposed to belong to the "spirit language." If a remedy does not seem to do any good, the sukya tries another one, just as does his learned confrère in more civilized countries.

Nobody must pass to windward of the house where the patient is undergoing a treatment, as one would kill the latter by "robbing him of air and breath." Should these orders be trespassed the sukya will exact a fine from the guilty ones. A woman [illegible] or with an infant must also keep out of sight as she might cause the death of both patient and sukya; these same restrictions apply also to any person of either sex having assisted shortly before at a burial.

Should the sick person not become any better, or even die eventually, the sukya will claim that his instructions had not been carried out carefully. Generally he ascribes such a calamity to disobedience in food restrictions. The actual or presumed breach of the above-named injunctions affords a convenient loophole for lack of success in the treatment.

Surgical operations are sometimes practiced by the sukya with the aid of splinters from broken glass bottles or bones, and chips of flint or obsidian. As antiseptics he uses ashes, tobacco, beeswax, and gums from certain trees.

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If the illness is not of a serious nature the sukya may cure it without seeing the patient. In such cases the remedies are administered by a third person, after having been "treated" (M.: *yabakan*) by the doctor by the usual methods of incantation.

The above-mentioned modes of cure are practiced by both Miskito and Sumu. The Sumu sukya also anoints the afflicted part of the sick in the form of a cross with a few drops of blood obtained by making a small incision under the tongue of a healthy virgin or boy with the aid of a prickle or thorn.[66]

Many sorcerers apparently believe in the efficacy of these methods, and they will practice these incantations over their own relations; when sick themselves, they will submit to such a treatment by one of their confrères. An old Miskito sukya from Rio Patuca, however, admitted to the writer that he practices all this hocus-pocus solely in order to keep the people in fear and thus be able to collect the fee.

TREATMENT OF EPIDEMICS.—In case of a very complicated and lingering disease or an epidemic the patients are isolated in provisional ranches built a short distance away from the village, in order to prevent the sickness from spreading. Green bushes or weeds are burned, and the heavy wreaths of smoke given off are supposed to act as a disinfectant. A bird or horselike figure (M. and S.: *dikutna*) is made by the sukya with sticks, leaves, clay, or wax, and he manages to lock the disease up therein after prolonged incantations. Once inside, the evil becomes incandescent and it is taken far away from the village, so that it can no longer harm the inhabitants. But should the sickness be very obstinate, the sukya orders the removal to another locality, and the infected village is burned to the ground.

CONVALESCENCE.—When the sukya has expelled the evil spirit and the patient is on the road to recovery the sukya organizes a feast to which all the inhabitants of the settlement are invited. Food and drink are offered to them. The custom is limited to the Miskito, who call this feast *pai*, a word which the Sumu apply to the sweet potato (M.: *tawa*).[67] It takes place on the eve of the day on which the patient is to leave the house of the sukya and return home again. The latter organizes everything, but all expenses are borne by the patient, who, however, has still to observe a strict diet and is not allowed to partake of any food or drink served to the guests. The feast lasts until daybreak, and no one is allowed to leave before that time, otherwise the disease with which the convalescent person was afflicted will be transferred to him. For some time after his recovery the patient's food is first brought to the sukya, who purifies it by

[66] Oviedo stated that the inhabitants of Chontales (Nicaragua) made blood offerings by piercing their tongues.

[67] It is of interest to note that according to the traditions of the Carib the spirits of the bush have a marked aversion to sweet potatoes (*Ipomoea batatas* Poir).

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whistling and blowing over it for about 5 or 10 minutes. Should he suffer a relapse and undergo another treatment the sukya will demand another fee.

RELIGION: SUPREME BEING, TRIBAL HEROES, SPIRITS, CREATION OF MAN, DELUGE, CHRISTIANIZATION

SUPREME BEING.—The religious system of these tribes has been fast disintegrating for the last generation. Nowadays both tribes believe in the existence of a Supreme Deity, which the Miskito call *Wan-Aisa*, "Our Father," and the Sumu *Ma-Papak* or *Ma-Papañki*, "Our Father" or "Sun-Father." Both tribes also make use of the name *Dawan*, "Master" or "Lord." This conception has probably been borrowed from Christianity; still Exquemelin (Engl. ed.: 251) states that in his days (1671) the Miskito believed in one God. This Deity, which dwells in heaven, is sometimes confused with the various tribal heroes. According to these Indians, God has created the world and the inhabitants, but He does not appear to worry a great deal about the individual being, nor is He able to ward off the various dangers which continually menace mankind; consequently He is not honored with offerings, prayers, worship, or sacrifice. Furthermore, He lives so far away from earth that it is impossible to enter into relations with Him, and He can not be approached by man.

MINOR GODS AND TRIBAL HEROES.—Both the Miskito and the Sumu believe in the existence of a number of supernatural beings, living formerly on earth like man. These are the sun (M.: *yu, lapta;* S.: *ma*), thunder (M.: *alwani;* S.: *alwana*), moon (M.: *kati;* S.: *wāiko*), rainbow (M.: *kumadora;* S.: *wayauli, yayuli*), stars and planets (M.: *slilma;* T., P.: *yala;* U.: *ma-baka* "small sun"), the Pleiades (M.: *pupu-wihta;* S.: *kalpas*). According to a Sumu myth a bright planet, called by the Miskito *kati-maya*, "the moon's wife," which is seen just above the new moon, was originally a girl, who was raised by her finger tips by *Udo*, the moon god (Heath, c: 77). These various heavenly bodies are supposed by the Sumu to travel in canoes, a belief which is also held by the Cuna of Panama.[68]

Some of these supernatural beings are in charge of the elements and are responsible for the great calamities which appear occasionally. The god of the wind and of the air, called by the Miskito *Prahaku* or *Aubiya*,[69] sends the hurricanes and the great inundations which destroy the plantations and kill the livestock. His representative is

[68] Erland Nordenskiöld, Les Rapports entre l'Art, la Religion, et la Magie chez les Cuna et les Choco. Journal de la Société des Americanistes de Paris, tome XII, Paris, 1929, p. 150.

[69] Cf. "obi" or "obeah," a species of sorcery practiced among West Indian Negroes.

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the rainbow, which the Panamaka Sumu sometimes call *walasa aniwe*, "the devil is vexed." At its appearance the Indians hide their children in the huts so that they may not see it nor point at it; by the latter act the outstretched arm or hand is supposed to become crippled and covered with terrible sores.

Thunder (M.: *alwani;* S.: *alwana*) is sometimes confounded with God among the heathen Miskito and Sumu. According to some, he created the world and governs it by appointing the seasons; others say that he lived formerly on earth and was the first man. When he thunders, it is to warn man that a flood is coming. From an Ulwa Indian, originally from the headwaters of Rio Grande, I obtained the following story, which I propose naming—

The Origin of the Kiawa Rocks

God (*Ma-Papañki*) sent Thunder (*Alwana*) as his representative to the earth to instruct the people in agriculture and in other arts and crafts. One day while Alwana was absent from home an evil spirit, named Kiawa, came and carried off his wife.

A parrot (*wardiwa*) informed Thunder of this fact while the latter was planting pine trees on a big rock at a place called to this day *Alwana kuma-ka rumpañ* (in Miskito, *Alwani ñi-sal-ka lulkan*). This locality is on Rio Quiguasca, the upper course of Rio Grande; pine-covered rocks and low hills extend there to the very edge of the river.

Upon hearing what had happened, Thunder left his work in order to wrest his wife from Kiawa. He found the latter at his home on Rio Iya, a tributary of Rio Tuma. Kiawa was drunk at the time, but he was a powerful giant, and Thunder was unable to master him at first.

When the fight began Kiawa turned into a boa constrictor (*wyail*) and swallowed his own wife, in order to prevent her from falling into the hands of Thunder. The two enemies then vied with each other in growing tall, in order to reach the clouds. Each in turn outgrew the other, until finally Thunder's head overtopped the clouds, which enabled him to press his enemy to the ground. With his long machete (*masat*) he then cut Kiawa in pieces, thereby restoring to life all the people who had been swallowed by the giant. The various parts of the latter turned into rocks which are visible on the upper Rio Iya, and are still known by the name Kiawa. The Indians claim that sometimes these rocks bleed, and that certain parts of the giant, as his head and navel, may still be distinctly seen.[70]

Spirits.—More powerful than God or the various tribal heroes are the numerous evil spirits (M.: *wlasa, lasa;*[71] T., P.: *walasa;* U.:

[70] Heath (b: 419) gives a slightly different version of this story.

[71] Dampier (I, 9) already states that the devil is called *Wollessow* by the Miskito.

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naval[77]), which inhabit the hills, caves, deep water pools, etc. They are extremely malevolent and they are ever ready to injure the people, causing disease or death. They are especially dangerous after sundown, when the fear of them makes a coward of the most daring and courageous Indians.

The Indian has a natural reluctance to reveal his religious ideas, especially such as he suspects to seem ridiculous to a stranger. It is therefore very difficult to obtain reliable information from them pertaining to this subject. At the death of a person the material body undergoes dissolution and one or more spirits are set free and roam about doing mischief, until they are directed by the sukya to the Hereafter. Animals likewise have spirits, or they may be possessed by evil spirits.

Conspicuous hills are generally haunted by evil spirits, and the latter are said to have carved the petroglyphs found at certain large river falls. Peculiarly shaped rocks are supposed to have been formerly human beings, who have become petrified, generally as a punishment.[78] Not only may sentient beings be changed into rocks, but they may also originally have issued from them. A Sumu legend traces the origin of that tribe to the Kaunapa Hill on the left bank of Rio Patuca, to a place where petrified navels are said to exist.

Trees and plants appear to be animated by spirits (M.: *lilka;* T., P.: *wayani;* U.: *wayaka*), which affect their growth and the ripening of their fruits. In order to increase the yield of a fruit tree, or to render barren trees productive, several objects are placed on their branches after having been blown upon (M.: *yabakan*) by the sukya. Vegetal attraction charms, which are carried for good luck in the various walks of life, would seem to point toward an original belief in plants possessing associated spirits.

Indians will keep at a certain distance from spirits and do not look at them nor point to them, nor even talk of them, as they might materialize, for, "speak of the devil and he is sure to appear." They even refuse to look at certain places haunted by evil spirits, and if they have to pass at close distance they will turn away the face in an opposite direction.

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[77] This word has evidently a close philological connection with *Nagualli*, the name of a magical high priest of the Aztecs; he was celibate and was supposed to assume animal shape at will. From his name is derived the term "nagualism," a species of sorcery still existing among the ignorant Ladinos in certain regions of Central America. *Nawa* or *nawak* is also the Sumu name for "puma" or "jaguar." Cf. also *naual* "sorcerer" and *naual-ih* "to predict, to enchant," in the Quiché language of Guatemala.

[78] On the right bank of Rio Coco, opposite Yaluk Hill, there are some rocks which are believed to be the petrified remains of a great Sumu sukya, named Panamaka, who lived on the said hill.

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The spirits may come to the neighborhood of human habitations in their anthropomorphic form and try to seduce Indians of the opposite sex, and abnormal children will be the result of this intimacy. Monstrosities among the animal and vegetable world are also held to be spirits. Just like snakes, these spirits are said to have a great passion for women at the menstrual periods. 776

CONNECTION OF SPIRITS WITH THE SILK-COTTON TREE.—The silk-cotton tree (M.: *sisin;* T., P.: *panya;* U.: *paniki*) is said to be the abode of the spirits of the departed, and no one ventures under it during the night. It must not be cut down, as by such an act the spirits would be robbed of their favorite resting place, and they would not fail to revenge themselves. Should it be absolutely necessary, however, to cut down a silk-cotton tree, the wrath of the spirits may be avoided by burying something at the foot of the tree in the shape of an offering, as food, red peppers, money, etc. When the tree has been felled, the object in question may be recovered. On Rio Lacus, a southern affluent of Rio Coco, a Sumu used for this purpose two small dolls or puppets (M.: *yapti;* S.: *ditalna*), which he had obtained from the sukya. This procedure, which savors of African origin, is the only case of this sort which I have met among the Sumu, but the habit in question is common enough among the Miskito. 778

The Indians also claim that a dugout made from the silk-cotton tree will groan continually during the night, and that at the same time it will travel with tremendous speed. A similar plaintive sound is said to be emitted during the dark by mattresses or pillows stuffed with the down adhering to the seeds of the tree. For the above-named reasons the credulous Indians make no use whatever of the haunted tree.

The Creoles and the West Indian Negroes dread this tree even more than do the Indians; according to them the spirit of the deceased, which they call "shadow" or "duppy," leaves the grave on the third day after death in order to roam about the woods, especially around the ceiba or silk-cotton trees. Some believe that these superstitions concerning the tree may have been taken from the Africans; still, the Maya of Yucatan and the Quiché of Guatemala, who have had practically no intercourse with Negroes, hold beliefs regarding the silk-cotton tree similar to those of the Miskito and Sumu. 778 715 [171]

CREATION OF MAN.—As stated above, the Miskito confound Thunder (*Alwani*) and God (*Wan-Aisa, Dawan*) sometimes with one another, and both of these supernatural beings are looked upon as the creator of man and the world in general. The Sumu, however, consider the Sun-god (*Uhubaput*) as the Almighty God and Creator of everything, and in former days are supposed to have worshiped him. 776

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773 According to a tradition recorded by Grossmann (b. 4) the world was created by two brothers, of whom the elder was named *Papañ*.[71] After the hills, lagoons, forests, rivers, and savannas had been brought into existence the two brothers were paddling about the river in a small canoe. In shooting a rapid the canoe capsized and the two creators were thrown into the water and compelled to make for the shore. Feeling cold, they built a fire; and feeling also the pangs of hunger they went into the forest, where they found some maize, which they plucked and roasted. As they made their meal they threw some of the cobs on the ground, where they instantly were transformed into animals; others thrown into the water became fishes, while the remainder stayed in the air as birds. Dumfounded at this sudden manifestation of life around them and the strange shapes which it assumed, they forgot their situation, until *Papañ* was brought to a realization of it by coming in contact with the fire, by which he was caught. As he started to burn, he ascended from the earth, rising higher and higher, until his brother could only see him as a large, round, burning spot high up in the sky. He thus became the sun (*ma*). While the younger brother was gazing upward and awaiting the return of *Papañ*, he was also lighted up by the treacherous fire and started to rise, but, being unwilling to share the fate of his brother, struggled to maintain his gravity, and thus raised a vast quantity of sparks; but after all he had to give in and go up, accompanied by the sparks, which spread themselves over the firmament, he remaining in the midst of them. Thus were formed the moon (*wáiko*) and the stars (*yala*). The Sumu consider themselves the children of *Papañ*, having been formed from his rays.

DELUGE.—The Miskito and Sumu, like many Indian tribes of America, have traditions of a great catastrophe in which a whole country was submerged, only a few people being able to escape to the mountain tops. The following legend, referring to such a deluge, was told to the writer in 1921 by a Panamaka Sumu from the village of Tasbapauni (Rio Prinsapolca):

Two brothers Suko (="bamboo") and Kuru (="cacao pataste," *Theobroma bicolor*) went out fishing to the Cualigua (Kwaliwa) Creek, a tributary of Rio Oconguas (Prinsapolca system). They caught many excellent food fishes of a species known by the Indian names *srik* or *sirik*. Then they had a gigantic river catfish (M.: *batsi;* S. *susum*) at the hook. Suko immediately wanted to eat a piece of the latter, but Kuru objected, as it appeared to him to be a sort of spirit. Suko, however, did not listen to his brother, and he roasted a piece of the fish and ate it. But hardly had he finished his meal when he became very thirsty. Having eaten too much, he

[71] *Papañ* is the Sumu name for "father."

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could scarcely move, and he asked his brother for some water. The latter did as he was told, but the more Suko drank the thirstier he became, and he kept his brother continually on the run to fetch water. Finally Kuru became tired of this and helped his brother to get to the edge of the creek, so that he might drink as much as he wanted.

Arrived at the waterside, Suko lay down on the ground, and reaching with his head down in the water, he kept on drinking without stopping. Gradually his body assumed the shape of a gigantic boa constrictor (M.: *waula;* S. *wayil*), while the head retained its normal size and shape. Kuru became scared and he went home, but did not dare tell anything about what had happened. When the people inquired about his brother, he answered that he was still engaged in fishing and would come a little later.

But the neighbors noticed that something had happened and they made off all together to look for Suko. Arrived at the fishing ground, they found the boa constrictor on the branches of a very high ceiba or silk-cotton tree. But hardly had they perceived him when a big flood came which inundated the whole country. Every one was drowned with the exception of Suko and the latter's wife and children.

CHRISTIANIZATION.—Many women and children who have not been christened carry small crosses, medallions, and scapularies around their neck, which articles they have obtained from passing priests, or bought from Ladino traders. They consider them generally as charms to ward off danger, sickness, poison, and death. By many Indians who have not received any teachings from missionaries baptism is considered often only a sort of magic ceremony to get a new name, drive out the devil, or ward off danger, evil, and the like. Even in the interior, where many Indians pretend to be Catholics, the cult of the saints is often nothing less than a fetish worship. Pictures and statues of the saints take the place of house idols. When the Indians are on the point of committing an act which does not agree with the teachings of the church, the respective images or statuettes are covered up with a cloth, so that the saints are unable to observe them. When they ask the saint for a special favor they make a vow or solemn promise to him and pray during nine consecutive evenings. In case the saint proves unreliable he is sometimes punished by being beaten or beheaded or mutilated in some other way.

During the colonial period Spanish missionaries made several attempts to penetrate among the aborigines of the Mosquito Coast, but their efforts were unsuccessful. An account of the activities of these Franciscan monks is given by Conzemius (b: 25–31). Since the last years of the nineteenth century Spanish Capuchins from Barcelona have been established at Bluefields and in several of the

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797 larger settlements of the country; they ignore the Indian languages, however, and their activities are practically limited to the Ladinos.

On the other hand, the Moravians (*Unitas Fratrum*), who came to the coast in 1849, have succeeded in evangelizing most of the Miskito and some of the Sumu as well. They use both English and Miskito in church and school. The first effort by Protestants to introduce Christianity among these Indians is the one made by English Puritans, who in 1630, under the Earl of Warwick, took possession of the island of Providencia, situated off the Atlantic shore of Nicaragua. They opened up commercial relations with the Miskito of Cabo Gracias a Dios and maintained themselves in the island until 1641, when they were ejected by a Spanish fleet. In those days a number of the Indians traveled to Providencia, where they became familiar with the Lord's Prayer, the Creed, and the Ten Commandments (Sloane, a: I, p. LXXVIII).

SUPERSTITIOUS BELIEFS: OMENS, CHARMS, AMULETS, TALISMANS, ETC.

787 BAD OMENS.—Anything occurring out of the ordinary is considered a bad omen (M.: *yulswin;* S.: *diluk*), and some calamity is believed to befall one or more of the persons present.

Should the hunter, for instance, miss the game an unusual number of times on a certain day, he considers this the sign or token that he will soon fall sick and perhaps even die.

If someone should quite involuntarily let the paddle drop in the water, this is accepted in the light of a token of something evil about to happen.

Should the dog act in a peculiar manner and run around barking all about the house, although investigations will show that there is nothing wrong anywhere, this is a bad omen and soon some one of the inmates will die.

The crowing of a hen is also taken for a bad augury. Ladinos and Creoles participate in this superstition, and they immediately catch the fowl in question and wring its neck.

825 BIRDS OF ILL OMEN.—There are a number of birds which cause
787 disease and even death when being seen, either at any time or under certain circumstances only. They should particularly be avoided by the Indian when he is hunting or working in the bush on a Sunday, but this belief is undoubtedly traceable to Christian influence. The Indians refuse to eat the flesh or the eggs of certain melancholy birds, believing that by so doing they will go wailing through the bush like the lonely bird itself. They also refrain from killing certain birds believed to have a keeper or owner invisible to man, and who would revenge himself.

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Certain owls and the snake hawk (M.: *waka, wakema;* S.: *makawa*) are especially feared, and the mere sight of them is supposed to cause disease or death.

The goat sucker (*Caprimulgus* sp.), a very common bird, is also feared owing to its uncanny nocturnal habits, the swiftness and peculiarity of its flight, and its note, which breaks the silence of the night. In Costa Rica its bones, dried and ground to a fine powder, are used by the Indians as a charm against their enemies. The powdered bone is mixed with tobacco in a cigarette which when smoked causes certain death, according to the popular belief.

A large spotted nightbird (M.: *boa, ukwan;* S.: *ya*), which appears sometimes in the neighborhood of the settlements at daybreak, is likewise feared.

The note of a nightbird, resembling the Mexican cuckoo and known by the onomatopoeic names of *pikwa* (M.) and *tika* (S.), is supposed to give a flat denial to any assertion made at that moment. When heard immediately after some one has made a remark, it means that the person in question has told a lie, or that he is unable to perform what he intended to do. If the Indians are, for instance, discussing some project, as a journey, festival, hunting expedition, and the like, the cry of this bird will cause them to put it off. When the hunter hears its voice he returns home immediately, knowing that luck will be against him on that day. At the mahogany camp on Rio Camanan (Rio Coco) a young Sumu from Rio Patuca was discussing with some of his countrymen the route to be followed on his journey back home, his period of contract having expired, when suddenly a loud *pikwa* was heard near by. The Indian immediately became alarmed and despondent, and it took some time to calm his fears.

SUPERSTITIONS REGARDING OTHER ANIMALS.—A small ugly species of croaking lizard, called "galley asp" by the Creoles (M.: *akak;* S.: *kakak*), is held to be very venomous. The Indians claim that after having bitten some one it will rush immediately to the nearest water; the person bitten must do the same, and whichever reaches the waterside first will survive (Bell, a: 265).

The zumbadora snake (M.: *matsikas*) is said to be very savage at certain times of the year, when its bite may become fatal. Others claim that, if molested, it will pursue a person, twist round his body, and lash him with its tail; it especially attacks a woman *enciente*.

The boa snake is said to contain a little venom in its fangs, which it discharges in the early morning only; at that time of the day its bite is therefore considered fatal.

A small speckled tortoise (M.: *swanhrih;* S.: *palan-kuwa*) is said to be very thoughtless, and to lose its way frequently, as it may be found occasionally on the hills, far away from the nearest stream.

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825 The Indians do not eat it, believing that by so doing they will become forgetful like the tortoise itself, and become lost in the bush or misplace things, and the like.

825 Strange animals are regarded as evil spirits and their appearance is a bad omen; the Indians do not dare to kill them. Heath, while 787 stopping with his Miskito crew from Kiplapihni at an empty house at Burimak (middle Rio Coco), came across a strange bat, which event he relates as follows: "We saw clinging under the palm roof a small snow-white bat. Some felt sure that it would suck our blood in the night; so it was killed, but turned out to be a perfectly harmless creature with very beautiful fur. But now, as no one present had seen such a white bat before, some declared that its coming was a bad omen; others that it was sent by an evil spirit, or was even more likely itself to be an evil spirit; that the man who killed it would soon die of a pernicious fever, etc. It took some time to calm the fears of the women especially." (Heath, b: 377.)

789 CHARMS, AMULETS, TALISMANS.—Some of the ornaments are un-751 doubtedly supposed to act as charms, amulets, or talismans, as they are worn chiefly by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tattoo, etc., seem to have had originally a religious and magical significance rather than a desire to embellish the appearance. Red and black paint is still regarded a prophylactic against disease.

789 Charms are used for managing the opposite sex, as a cure for barrenness by women, in order to have a male child, and for luck in hunting and fishing. Jaguar teeth are carried as talismans for courage, strength, and to stimulate virility and excite venery.

Charms on fruit trees have the object of increasing their yield and keeping birds, animals, and even man from plundering them. In order to render fruit trees more productive the Miskito drive a nail in the side of the stem facing the west. When they make staffs for turtle spears they also prefer utilizing the west side of the stem of the pejivalle palm, believing that part of the trunk to be more durable and resistant.[73]

Celts or stone axes, which are occasionally dug up in the fields, are regarded as "thunderbolts," and were worn in former days as amulets for protection against lightning. They were also supposed to render the bearer brave and enduring. They are considered very efficacious in healing certain diseases, and the sukya makes use of them in practicing his rites of sorcery. On account of these proper-

[73] The Creoles, in making tea from the medicinal bark of certain trees, likewise prefer using the bark on the side facing the sunset.

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ties the Indians will part with stone axes only for a comparatively large sum of money.

Similar superstitions about these stone celts are held by the other populations of this part of Central America. The local names "thunderbolt," "thunderstone" (Creoles), "piedra de raya" (Spanish), *alwani mahbra*, *imyula mahbra* (M.), *alwana suma* (S.), *dama up* (Rama) in themselves point to a belief in their celestial origin. They are supposed to come down from the sky with the lightning and they are held responsible for the damage done at such an occasion. They penetrate the soil to a depth of 7 feet and then slowly work their way upward, reaching the surface again in seven years. It is claimed that sometimes such a thunderbolt may be found in a tree which has been struck by lightning. The surface of these celts is always smooth; often they are highly polished. Their color is always supposed to be identical with that of the soil in which they have been discovered.[75]

DIVINING ROD.—The Sumu of Rio Prinsapolca are said to make use of some sort of a divining rod (M.: *smaya kâikaya;*[77] T., P.: *tiñ amañnin;* U.: *ya bohnaka*), consisting of a smooth rod of either cacao wood or wild cane; it is about 3 feet in length, and a cotton thread is tied around the center. The Sumu appear to use the *tapúa* for the same purpose as the Jicaque of Honduras; with its aid they claim to be able to obtain almost any information regarding the future, their luck in fishing, hunting, love-making, etc.

I have not been able to see any of these rods, nor did I obtain any definite details regarding the manner in which they are used. The following account is taken from Collinson (b: 152): "Another very common and favorite method of unraveling the unknown is an incantation by a sukya. He commences operations by cutting a small wand, peeling it, and tying a short string to its top. He then strokes it repeatedly, muttering in undertone words supposed to form an incantation; after this has been done for some time, one end of the stick is placed in the left elbow, and the right arm is stretched out to the string end. If it exactly reaches this when extended to its full

[75] Some of the Creoles and Ladinos place stone axes in their water tanks and earthen water jars, in order to keep the drinking water pure and clean and at the same time preserve themselves from certain maladies. These celts are also believed to protect the houses from lightning, and for that purpose are suspended from the roof. A "true thunderbolt," it is claimed, may be determined by tying a thread firmly around the middle of the celt, and then attempting to burn the thread. This may be done by holding a match to it, or suspending it over a lighted candle, or even throwing it in the fire. If the celt is genuine the thread will not burn. Of course such an experiment can be made successfully with any smooth stone to which a thread has been tied so firmly that there is no air intervening, thus retarding combustion of the thread until the stone itself is hot enough to burn it.

[77] Lit.: "to have a hunch."

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length the wand will reveal the truth; if not the string must be altered and the process repeated until it is in its right position. Questions relating to the present and future will then be answered by the sukya, correctly as he states, though I must confess that the queries I propounded were never replied to very successfully, but I was an unbeliever, and it is a notorious fact that spirits are put out of their calculations by the incredulous."

CONTROL OF RAIN AND WI[illegible]in and wind can, according to the Indians, be produced or s[illegible] at will by human, animal, or spirit agency. Thus while paddling down Rio Plátano with a Miskito crew, I noticed clouds gathering windward and threatening rain. The captain of the boat, upon noticing them, motioned the rain with the right hand to pass on, with the following words: "Do not come here as we do not want to get wet now! We have no shirt nor trousers with us to change, and if you will wet us we will have to remain in the moist clothes the whole day long and suffer from the cold. Pass on to those indolent and good-for-nothing people on Rio Patuca; they are all at home now lying in their hammocks."

Bell (b: 157) relates a similar experience with the Miskito of Rio Prinsapolca: The Indians, hearing the rain coming by the noise in the distant bush, vainly tried to keep it off by blowing with their mouths and driving the breath away on either side of their faces. They also spoke to the rain, telling it of the uselessness of its coming to wet them, thus: "Pass on, pass on; we are all wet already. You need not come here; pass on to the head of the river. There is gunpowder and tinder lying uncovered on the rocks. A man is burning a plantation there; pass on quickly, lest another shower wet it before you."

Often when the Indians heard a shower coming they pushed their canoe quietly under the thick bush to hide until the rain had passed, and were much annoyed if any one talked or made any noise. The killing of a howling monkey was also believed to bring rain, as that animal belongs to the water spirit, who will be angry at such an act (Bell, b: 157).

While proceeding up Rio Coco from the port Cabo Gracias a Dios to the Miskito settlement of the same name, my two paddlers put up a small sail, and then kept on whistling in order to call the wind to help them in their work. When all their efforts were of no avail they became rather vexed and made some disobliging remarks about the "lazy wind" (*pasa sriñwankira*).

ECLIPSES.—An eclipse of the moon is said by the Sumu to be caused by the jaguar devouring that heavenly body; their name in itself points to this belief (*wáiko nawa kaswe, wáiko nawa kasya;* lit.: "the jaguar is eating the moon"). At a lunar eclipse, no matter at what time of the night it occurs, the Sumu get up immediately in order

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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kaswe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78] 821

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kati di-skura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu di-skura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers. 789 [751]

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sdika*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless. [824]

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontín" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast. 231

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects. 278

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1930, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

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278 Camotillo is the Spanish name for a tuberous plant, said to be not unlike the sweetpotato vine. It is supposed to grow in a wild state in certain regions of the Mosquito Coast, in the neighborhood of the rivers, but it is known only to few persons. The tuber is dried in the sun and reduced to a fine powder by a very laborious process. After pulverization it is introduced into the food or drink of the intended victim. Death will set in after exactly as many days as the tuber in question had been extracted from the soil at the time of administration.

The Ladinos believe that many Miskito and Sumu are acquainted with this manner of disposing of an enemy, but I was unable to obtain from these Indians any reliable details pertaining to the plant. All my Indian informants denied knowing it. In 1919 the candidates for president and vice president of Honduras died several months previous to the election, and the ignorant people of that Republic ascribed their deaths to the administration of camotillo by adherents of the rival political party.

753 754 WITCH POISON.—Many Indians believe that poison can be wafted through the air to the intended victim. The fear of "buried poison" has been introduced among the Miskito by Negroes from British Honduras and Jamaica, who have settled at the coast. In fact the Miskito of Rio Coco and Honduras nowadays ascribe disease not so much to the mischief of evil spirits as to the presence of buried poison in the neighborhood of the sick person's house. This poison is supposed to have been hidden there by one of his enemies with the object of causing him to fall into some lingering disease, as dysentery, and eventually to die. Such poison, which is generally inclosed in a bottle, is said to soak through the cork, spread to the surface, and then cause disease to all the people in the neighborhood.

755 When after the administration of different remedies there is no improvement in the condition of a sick person, a "poison doctor," that is, a sukya skilled in the discovery of such witch poison, is called. The latter, upon his arrival, takes a little walk around the house, and then pretends to smell buried poison in the neighborhood. He promises to take it out if everyone in the settlement will give him a small amount of money. As the presumed bad effects of such buried poison will gradually spread to the whole village, everyone will pay his share, and the following day the sorcerer promises to do the needful. In the meantime, generally during the night, he buries a small flask of a dark liquid near the house of the sick person. In the morning the entire population of the village is present in order to witness the extraction of the source of the illness. After searching the vicinity of the house for a considerable time the sukya finally walks to the spot where he buried the small bottle during the night, and then triumphantly shouts: *Naru sa* "Here it is." He shows the

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liquid to the people present, but none of them dares to inspect it, not being immune from its effects as are the poison doctors and the foreigners. During the last two decades the fear of buried poison has spread to the Tawira-Miskito and to the Sumu; these Indians believe that the Miskito from Rio Coco are especially dangerous on account of their habit of killing their enemies with the aid of buried poison. Certain charms, as, for instance, the bitter antidote bean (*Fevillea cordifolia*), are occasionally carried to ward off the effects of such witch poison. 755

DREAMS.—The Indian pays great attention to dreams (M.: *yapri sûkkan;* T., P.: *amana;* U.: *amiñna*). When he dreams that he has killed plenty of game he is certain to have good luck in the chase on the following morning. If he dreams of an accident he refuses to leave the settlement during the next few days. When he dreams of strangers, he expects a visit in the near future. The sukya, while curing a sick person, invokes friendly spirits in order to obtain from them during the dream information regarding the nature of the illness. 787

HAUNTED TREES.—The silk-cotton tree (see Religion, etc.) and the various species of figs (*Ficus* sp.), especially the giant chilamate or higuero, are said to be haunted. The Indians and Creoles believe that these fig trees flower only during the night and hold the fig to be the true fruit. Any one daring to go under the tree about midnight will be able to see the blossom and after that will be favored with good luck in anything he may attempt. This belief is shared by the ignorant Ladinos, who claim that the fig trees flower only on Good Friday night and that a blanket spread under them at midnight will be covered with small blossoms on the following morning. 824 [777]

MAGIC AND SORCERY: SUKYA, OKULI, SPIRITIST, OBEAH OR VOODOOISM

SHAMANS IN GENERAL.—Among these credulous people a great influence is exercised by the shamans, of which there were formerly only two categories, the *sukya* and the *okuli*. Of the latter there should be only one at a time, but of the former there is one in almost every larger village. In recent years two other sorts of shamans, the *spiritist* and the *obeah man*, have appeared on the coast. 756

These shamans play a great rôle in the life of the Indians, for they act as medicine men, doctors (see Hygiene: Diseases and their cure), augurs, conjurers, magicians, wizards, diviners, rain makers, spell-binders, priests, preachers, teachers, guides, advisors, counsellors, depositaries of tribal traditions, and the like. Their opinions were formerly of the greatest weight in tribal assemblies. Still, there is nothing characteristic about them in the way of ornament or dress,

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and they are not to be distinguished in their outward appearance from the ordinary mortals.

According to Miskito traditions their art was introduced by a white man from the east, known as *Almuk-awra* (lit.: "old drift man"), who was apparently some sort of culture hero. This reminds of the Mexican myth dealing with *Quetzalcoatl*, who also came from the east and was likewise a shaman. The first Sumu shaman is said to have been a man named *Ado* or *Mamañ* [80] (Grossmann, b: 4).

THE SUKYA.—This is the name of the lowest of the two kinds of sorcerers found originally among the Miskito and Sumu. The name is also current among the neighboring tribes, as the Paya and the Rama, although the indigenous designations for the priest-doctor in these two languages are respectively *wata* and *turmala*. The term sukya (sukia, suquia) [81] is also employed by the Mova and the San Blas Indians of Panama, and likewise occasionally by the Talamanca of Costa Rica. In the dialects of the Talamanca region, however, the native name is *tsukur* (or *tsugur*, *tsugru*, *tsugrûk*, *tsuku*). In the various Costa Rican languages the elements *tsu* or *ču* mean "to drink" or "to suck," and they occur in words which may be translated by "milk," "female breast"; this is also the case with other Central American languages, as Maya-Quiché, Paya, Mixe-Zoque, Lenca, Xinca, Sumu, and Guaymi-Dorasque. It would appear, therefore, that the word sukya is etymologically related to the above terms, and that originally it meant something like "sucker," as the native medicine man extracts the material cause of the pain or ill being by the action of sucking.[82]

The sukya is generally a man above the average Indian in intelligence.[83] His office is generally hereditary, but frequently he is succeeded by his nephew or his son-in-law. In practically every large village of the Miskito and Sumu habitat there is a sukya to be found; Wickham (c: 207), however, did not observe any such sorcerer among the Ulwa of Rio Escondido. The sukya communicates with the unseen powers [84] and may use his art to the welfare or destruction of

[80] *Mamañ* is, however, the Sumu name for "mother."

[81] The first mention of this name is found by M. W. (300, 302, 304, 306, 307, 308, 309) in the form *succhea*.

[82] See Rudolf Schuller, Las Lenguas Indígenas de Centro América. San José de Costa Rica, 1928 (pp. 53–54).

[83] Occasionally the sukya is an elderly woman. A young woman is, however, not qualified for this office, as she would be exposed too much to the influence of evil spirits and other supernatural dangers, especially at the menstrual period and at childbirth.

[84] Dampier (I, 9) already states that the devil, called *Wallawa* (=*walasa*, *wlasa*, or *lasa*) by the Miskito, appears to their priest when they desire to speak to him on urgent business. M. W. (308), who writes a little later, that is, about 1699, spells that word *wallasoe*.

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ordinary mortals. Thanks to these supposed powers, he is feared and respected far and wide. Such a state of affairs is occasionally very injurious to the Indian community as a whole, but in general abuses on the part of the sukya are not common. 756

Besides curing the sick, the advice of the sukya is sought in many instances. He is consulted in order to find out the whereabouts of a lost or stolen object, and he furnishes remedies to cure ill luck, to influence the heart of a person of the opposite sex, to increase the valor and courage of a man, and the like. He will inform the hunter how to proceed in order to secure plenty of game, for he has generally a good knowledge of the instincts and habits of animals. If he is unsuccessful, he claims that his client has transgressed some prescription. 756 787

Some of these shamans have some knowledge of astronomy; others imitate the voice of other persons or of animals and birds, and some appear to be clever ventriloquists. They foretell the death of a sick person, and help artificially by means of poison on the specified day, in order to strengthen their reputation. 756

The sukya will also be asked to harm an enemy by casting an evil spell over him. The usual method followed by the Miskito sukya is to fire a gun in the direction of the person upon whom he wishes to inflict injury. His Sumu confrère will send disease or death by mistreating or stabbing an object, usually a doll or puppet (M.: *yapti;* S.: *ditalna*), made of white tunu bark, and supposed to represent the intended victim. Some of these sorcerers are also said to transform themselves into a snake or jaguar and then harm their enemy. 756 754

There are good and bad sukyas, who are sometimes at feud with each other. In his own village the sukya is generally said to be good, but in the neighboring settlement there is a bad one, whom he has to fight and send away the evil spirit which the latter despatches in order to cause disease and death. The bad sukya will, for instance, send an animal or bird with poison to the neighboring village, but his confrère from the latter settlement sees it coming and sends it back. The animal goes hither and thither, until finally the "stronger" of the two opponents wins.

INITIATION OF THE SUKYA.—The choosing of his career by the sukya is supposed not to be voluntary. A person whom destiny has picked out for this high office is said to come under the influence of some spirits, from whom he is unable to deliver himself. During the night he acts like an insane person; he gets up from bed and talks with invisible beings in a mysterious "spirit" language. 756 776

In this state he makes prophecies, and if these come true his friends will urge him to become a sukya. He then prepares himself for his career through fastings, vigils, and other means of achieving exhaustion and the novice will be reduced to a skeleton. During this

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time he will come under the influence of some sort of tutelary spirit which henceforth will act as his protector; this may be the spirit of a person, animal, plant, hill, cloud, star, etc., or some other kind of supernatural being, by whose intermediacy the would-be sukya may converse with the evil spirits. This conception of guardian spirits is found in large areas of America, and it has probably not originated from the tutelary angel of the missionaries.

The candidate is then ready to exercise his profession, but on the day of initiation his food must be prepared according to a manner prescribed by custom. It must be cooked by a young boy or girl, not yet arrived at the age of puberty; a slender hardwood tree, called *liwdi*, which grows very sparsely in the forest and burns readily in the green state, must be used as firewood.

The sukya is obliged from time to time to strengthen his powers by religiously abstaining from certain food and sexual intercourse, and in other ways lead a life of self-denial.

Among the Sumu any candidate for priestly and medical honors must perform the fire dance; this fiery ordeal must also be repeated occasionally in order to strengthen the connection with the unseen powers. A big pile of *liwdi* wood is made in a cleared spot in the bush and the whole is covered by a thick layer of bijagua leaves. Fire is then put to the whole, and when in full blaze, the sukya issues from the forest. He has the whole body smeared with black paint, and is entirely naked save for a loin cloth. He then walks upon the pile and remains there standing quietly until the wood is partly consumed. Then he orders the fire divided into four parts, and walks from one pile to the other with his bare feet until all the wood is burned. Strangers are never allowed to witness this performance. The Miskito greatly respect the Sumu sukya for this act which their own sorcerers are unable to perform.

Roberts states that the fire dance is also done by the sukya of the San Blas Indians (Panama), and that the effects of the fire are resisted by some powerful antidote extracted from vegetable fibers. This ordeal is also performed by the shamans of Raiatea (Society Islands), Kandavu (Fiji Islands), and of a tribe in British India, but it has apparently not been observed in other parts of the world.

THE OKULI.—The okuli[35] is the highest shaman among the Miskito and there never should be more than one at a time. The Sumu do not have any sorcerer ranking above the sukya, but many of them recognize the okuli of the Miskito.

The okuli is said to be a special representative of *Alwani*, the thunder-god, or of *Aubiya* (or *Prahaku*), the lord of the air, and is supposed to control the elements. He is much more powerful than

[35] Among the Bribri Indians of Costa Rica *oke* is the name for a sort of shaman.

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the sukya, and he does not require the four black sticks, indispensable to the latter, while curing the sick. His powers are imparted to him, while in a state of unconsciousness, after having been struck by lightning. He is then able to make prophecies and to give other proofs of his aptitude for the high office, whereupon the prominent sukyas acknowledge him as their okuli. It is not absolutely necessary for him to have been a sukya himself. 756

The last true okuli lived at Kum, a large Miskito village on the lower Rio Coco, where he died about 1895. He was known by the name of *Pasa-yapti* "Mother (or Goddess) of the Wind," and I was unable to learn his real name. Shortly before his death he said that Lauro, the present okuli, was to be his successor. The latter had not actually been struck by lightning, but lightning had struck into a coco palm adjoining his house in Sandy Bay, and he personally became unconscious as a result of the fright. Lauro was still a member of the Moravian Church in those days, and for that reason he refused to accept the office offered to him upon the death of *Pasa-yapti*. But finally, yielding to the pressure from the heathen Miskito, he began to assume the duties of the okuli. Lauro, however, resents the latter name, for he pretends to be a good Christian; he calls himself merely "prophet," and ascribes his supernatural powers to the grace of God.

Lauro is a very pleasant man, who was about 55 years old when the writer visited him in Sandy Bay in 1921. He has a slight admixture of Negro blood, but pretends to be a pure Miskito Indian. According to Mr. Danneberger, the Moravian missionary at Sandy Bay, he leads apparently a very clean and moral life. Although excluded from church membership, he frequents the Moravian church at Sandy Bay, and insists upon all his relations doing the same.

It is claimed by the Indians that Lauro has to quench his thirst exclusively on coconut water, and that a big flood would come and inundate the whole country should he ever take a single drop of ordinary water. Every year at the beginning of September he holds a day of prayer, when no one is allowed to travel nor to do any outside work. He then repairs to the sea at Sandy Bay, accompanied by a small child, and wades into the water up to the waist, praying and offering food to the elements, in order to keep them under his control. Every year his agents travel all over the coast to the Indian villages in order to collect money for Lauro, and many of the Christianized Indians pay the small amount asked for, so that the "prophet" should continue exerting his influence to keep hurricanes and floods away from the country. No Indian dares trespass his orders, and even some white foreigners have paid money to his agents.

When the Indians from Sandy Bay wish to undertake a voyage to the neighboring Mosquito Cays in order to catch turtle, they first consult Lauro with regard to the weather and the outlook for a good

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756 catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

794 THE SPIRITIST.—A new movement, not unlike the nyalism among Jamaican Negroes, has appeared among the Christianized Miskito
786 during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito
[755] as *pirit-uplika* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

754 OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him.

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements.

COURTSHIP.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yamni kâikaya sâika;* T.: *yamni talnin pananbas;* U.: *yamka talnaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *misbara kâikaya sâika;* T.: *ba talnin pananbas;* P.: *ma irihni talanin pananibas;* U.: *di dutka talnaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of

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832 the Mosquito Coast make current use of these various "remedies," and that the Miskito women have the habit of mixing from time to time a small portion of their menstrual blood in the wabul for her husband, in order to keep the latter's affection.

582 PREMARRIAGE ORDEALS.—Before a young Sumu is allowed to have a wife he must give proof of his ability to shoulder the responsibilities of married life—that he is indeed a man. A council of the elder men of the village or district will investigate any complaint brought against the would-be bridegroom and he has to undergo certain ordeals. The latter consist of more or less rigid fasting, flogging, scarification, and the like. If he cries out or merely moans he will have to submit to the ordeal on a future occasion. The candidate for marriage bends down his bare back, whereupon all the married men punch him as hard as they can with their elbow. He endures the pain without a groan, for the women are there as spectators of his powers of endurance. If he is unpopular he may receive a severe beating, and occasionally accidents arise in this manner. Then an elderly man beats him with a whip made from tapir hide, consisting of two strings twisted like a rope, and having about 1 inch diameter. A young man is not considered worthy of a wife unless he is able to endure this ordeal with fortitude. If he has stolidly endured all these pains he is allowed to marry. He makes a canoe, bows and arrows, and other weapons, and he brings game and firewood to his fiancée. He also prepares the plantation for his prospective wife in order to prove that he is able to perform the duties of a future family head.

MARRIAGE TABOOS.—The children of two brothers or of two sisters are considered real brothers and sisters and they are not allowed to marry each other. The ban against the marriage of these cousins probably owes its origin to the fact that such children were often really half brothers and half sisters. Upon the death of his wife a man generally married her sister; similarly, if a woman had lost her husband, she was taken in marriage by her brother-in-law. For that reason the names for stepfather and father's brother, on the one hand, and for stepmother and mother's sister are identical in most of the dialects spoken on the Mosquito Coast. On the other hand, the children of brother and sister are not considered blood relatives, and a union between such cousins is the common, and originally perhaps the only, marriage allowed. Unions of this kind are still encouraged to this day, for it is felt that family ties are strengthened thereby.

Marriage between an Indian and a near relative of his *libra* or "covenant friend," and his *lapya* or "birth friend" is also banned, although such connections are not blood relations (M.: *taya;* T.: *möih;* P.: *wandih;* U.: *wanih*).

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BETROTHAL AND TRIAL MARRIAGE.—The children are sometimes engaged by their respective parents while still in early infancy, even at the age of 5 or 6 years. The young boy makes his fiancée and her parents a small present, and helps them occasionally in their work. When she arrives at the age of puberty (about 10 years) he takes her as his wife. The man is considered a member of his wife's family and he goes to live in the house of his parents-in-law. When the family enlarges he will build a house of his own near by. Perhaps a misunderstanding of the above facts has led M. W. (309) to state that a system of trial marriage existed in those days among the Miskito. According to this author the probationary period lasted about two years, at the end of which a feast was prepared and then the union was considered legitimate, there being no ceremony. To-day the young man marries generally at the age of from 16 to 18, the girl at about 12.

WEDDING.—Exquemelin (Engl. edit.: 253; French edit.: II, 267–268) gives the following account of the marriage ceremony of the Miskito during the latter part of the seventeenth century. The father, after assuring himself that the lover was an expert hunter and fisher, ordered his daughter to bring a calabash of a beverage prepared from pineapples and honey; the suitor drank one-half of the contents and then tendered the remainder to his future wife to drink. According to this same author the buccaneers had the habit of buying a Miskito woman for a knife, ax, or hatchet, upon their arrival at Cabo Gracias a Dios. She was obliged to remain with him during the time he stayed at the settlement and to supply him with the products of the plantation, while he went out hunting and fishing. (Exquemelin, Engl. edit.: 249).

Among the Sumu the nuptial ceremony is performed by an elderly man who first gives the couple a long talk. Then the two aspirants join the thumb of the right hand, whereupon he separates their hands by cutting through with his own hand. There is no record of the chiefs having possessed the *jus primæ noctis* as appears to have been the case with the Chorotega (Orotiña) of the Pacific coast of Nicaragua and Costa Rica. Marriage with other tribes was not permitted in former days by the Sumu, and the children of strangers were killed. This accounts for the fact that the Sumu have kept themselves free from foreign admixtures, whereas the Miskito intermarry with all races and absorb everything. The Sumu are very jealous of their wives and until recent times did not allow them to converse with strangers.

MOTHER-IN-LAW TABOO.—As soon as the marriage ceremony has taken place the young Sumu husband must not speak any more to his mother-in-law, nor even look at her. When he is at home she remains in her own apartment, which is separated from the remainder

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606 of the house by a partition of bark cloth or imported calico. After he has left she comes out and follows her usual occupations. Upon his return he must give warning by striking the boat with the paddle or pole before proceeding to the hut, and she retires immediately to her own apartment. When she returns from the plantation or from fishing she must likewise give notice, and he walks away for a few minutes, until she has reached her quarters. Should the two meet unexpectedly she will quickly throw a cloth over her head, and he will pass on, turning his face away from her. Should, however, he purposely look at her, or fail to give the prescribed warning upon his return, she will consider this an insult for which she will demand payment through a third person.

This custom appears to exist among all the Sumu subtribes; it is also found among the Miskito of the upper Rio Coco, who are largely mixed with the Sumu, but it has not been observed in other parts of the Mosquito Coast. The origin of this custom is somewhat obscure, and I was unable to obtain from the Indians any satisfactory explanation regarding it. The usual answer is that they observe it because it has been handed down to them by their ancestors. According to Groesmann (b: 4), each mother stands under the special protection of the tapir, who is angry at the man who has robbed her of her daughter, and only refrains from punishing him on condition that he never looks on her. Therefore the man who has looked on his mother-in-law is fated to meet his death from the enraged tapir, unless absolved by making a payment to the wronged woman.

In former days the same taboo existed among the Miskito between a man and his sister-in-law, the wife of his birth friend (*lapya*) and the wife of his covenant friend (*libra*); or between a woman and her brother-in-law, and the husbands of both her *lapya* and *libra*.

841 MENSTRUAL SECLUSION.—During the menstrual periods (M.: *mairin siknis* "woman sickness," *kati siknis* "monthly sickness"; S.: *tiñ dutni, tiñ dutka* "bad hand") the woman is considered unclean and she is shunned by her husband. She must not touch any food intended for other people, otherwise the latter may die. Formerly the young girl had to undergo certain puberty ordeals at the first menstrual period, but I was unable to obtain any details relating thereto.

When the Miskito woman is inconvenienced in the accustomed manner, she occupies a small temporary hut (M.: *tala watla* "blood house") built by her husband at a few hundred yards from the settlement. She remains there a couple of days. At night one of the other women joins her to keep her company, but to all the men, her husband included, the hut is taboo. While in this state of impurity the woman must not be seen by a sukya, for that would weaken the latter's connection with the spirits, and perhaps even cause his

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death. At the conclusion of the third day the woman bathes herself in a neighboring creek and then rejoins her family. All cooking or drinking vessels used by her during this period are broken and thrown away. 841

Among the Sumu similar beliefs are held with regard to menstruation. The woman, however, never leaves her home, but she remains secluded in a corner of the house, a cloth partition separating her quarters from the rest of the hut. The Miskito habit of retiring to a provisional ranch or "going to the bush" (M.: *untara dimaya;* T., P.: *asaňpas kana;* U.: *asaňpas awaň*) has never been practiced by the Sumu, and it would appear as if it was in former days also unknown among the Miskito. In fact the Sumu state that the menstruous woman must keep away from the bush, where she might be attacked by jaguars, pumas, or snakes, or where she might be seduced by a spirit in anthropomorphic or zoömorphic form. When the three days are over the woman takes a steam bath at home. The latter is prepared by heating a few large white stones and then pouring water upon them, while the woman will bend over them with a thick blanket thrown over the naked body. After this she is no longer considered unclean.

CELIBACY.—Celibacy is considered as something abnormal and uncanny among the Indians; people leading presumably an irreproachable celibate life are supposed to practice sexual intercourse with spirits. 589

PROSTITUTION.—Prostitution is now met with among the Miskito inhabiting such settlements as have a large percentage of foreigners or Ladinos, but this has never been a recognized institution as among the more civilized tribes of Mexico and Central America. 548

POLYGAMY.—Polygamy exists, but it is not very common, and is generally limited to men of rank, as sorcerers. I have known Indians with 4 and even 5 or 6 wives, who all lived under the same roof. Each one of the women had her own hearth and cooking utensils and she prepared the food for herself and her children. The husband ate wherever he preferred. When he wished to buy something for his favorite wife he must treat the others alike in order to avoid scenes of jealousy which, it must be said, are very rare. The women have rarely a dispute with each other; sometimes they are all sisters, the oldest one, however, being generally the mistress of the house. They call each other *lakma* (M.) or *kaliňa* (S.). Sometimes an Indian with wife and children may adopt a young orphan girl with the intention of making her his wife when she arrives at puberty. 595

According to Henderson (223) the Miskito King George, who governed at the beginning of the nineteenth century, had as many as 22 wives. M. W. (309) and Sloane (a: I, p. LXXVII) mention the existence of polygamy for this tribe; elsewhere, however, the

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595 last-named author (b: IV, 279) states that the Miskito have only one wife. Dampier (I, 9) and Jeffery (45) likewise state that the Miskito marry but one wife with whom they live until death separates them.

586 DIVORCE.—Occasionally husband and wife separate by mutual consent, the children remaining in charge of the mother. A woman is generally abandoned by her husband if she does not give birth to any children. The young husband does not remain at the hut of his parents-in-law when he is sick, but returns home to undergo treatment; in case his disease is incurable, or if he is lazy or cruel, he may not be admitted again at the house of his parents-in-law, and the marriage is then considered dissolved. The husband has, however, the right to claim payment for all the presents he has made to his wife or to her family.

587 REMARRIAGE.—If a widow wishes to remarry she must be bought from the heirs, that is, the relations of her dead husband. Such a payment is known as "widow money" (M.: *pyarka mana;* T., P.: *tiāmak minit;* U.: *pyarka makalnak*). The widow is considered the property of her husband and with the death of the latter passes to his relations.

In no case is a widow allowed to remarry until the festival of the dead (M.: *sikkro, sikro;* S.: *sdū*) has taken place, which is about one year after the death of her husband. In case the future husband agrees to have this festival celebrated at his own expense, he need not pay anything else for the widow. The author who wrote about 1699 under the initials M. W. (309) was evidently mistaken in stating that among the Miskito the widow was allowed to remarry three days after the death of her husband. According to Exquemelin (Engl. edit.: 254), who wrote about the same period, this action could not take place until two years later.

CHILDREN: THEIR BIRTH AND EDUCATION

844 SECLUSION AT CHILDBIRTH.—The prospective Miskito mother occupies a small hut (*dūkan watla*), built for her by her husband in the bush, at a short distance from her home, just as she does during the menstrual period. She remains there about two weeks, accompanied by a female relation or friend. She has to observe similar regulations as at the menses, for she is considered impure and may pollute the house and contaminate the other inmates. She is particularly exposed to attack from snakes, beasts, and supernatural beings, and neither she nor her child must be seen by the sukya. She must also abstain from certain food, not only on account of her own well-being, but also on that of the community as a whole. The Sumu woman, however, accouches in a corner of the hut, which has been screened off either with bark cloth or with thatch.

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DELIVERY.—Only females are present at childbirth, the elder or more experienced ones acting as midwives. The methods employed to hasten delivery are in general very brutal, and they lead occasionally to the death of both mother and child. One of the befriended persons present severs the navel string with the aid of a sharpened piece of bamboo or a wood splinter, and then ties it with a cotton thread. In virtue of this act she will henceforth be considered as a blood relation to the newborn child and the latter's parents as well, and they call each other reciprocally *lapya* or *lahpya*. This corresponds loosely to the *compadre* and *comadre* system of the Ladinos. The *lapya* appears to have been limited in former days to the Miskito, but lately it has spread to the other tribes of the Mosquito Coast—Sumu, Rama, and Paya. The afterbirth is buried by one of the women as soon as it is expelled. The same is also done with the umbilical cord, in order to prevent pigs, dogs, or other animals from eating it up, which may result in sickness or death for the baby.

COUVADE.—Traces of the couvade may be observed among both Miskito and Sumu. During the first days of the newborn child the father will refrain from hard work and keep out of the bush. He will also abstain from certain foods and from salt and chili pepper. The mother also has to keep a diet. Exquemelin (Engl. edit.: 253) denies the existence of the couvade among the Miskito, but the actual facts have probably escaped his observation. This author states that the mother bathes her baby at the next river, wraps it up in a *cabalas* (=*kwala* "cloth") and then follows her usual occupation. According to my various informants the bath of the mother and the child is postponed until the third day after delivery. But the mother is considered impure for from one to two weeks longer. After that period has elapsed she may return to her husband, who prepares a feast with food and drink in honor of the baby and the *lapya*.

BIRTHMARKS.—Birthmarks (M. and S.: *wasaki*) are ascribed by both tribes to the failure of the mother to obtain during pregnancy a certain article of food for which she had a vehement desire. The Indians supply, if possible, a woman *enciente* with any kind of food for which she may ask. If during that state she should have a craving for a slice of pineapple the husband will do his utmost to procure the fruit. Should the prospective mother learn that it is impossible to obtain it, and then thoughtlessly pass her hand over her head, breast, or arm, the child would be born in due time with the mark of a pineapple at the corresponding part of the body. A somewhat similar belief exists among the ignorant people in large areas in Europe.

A certain skin disease is found sometimes on the newly born child, and is known among the Miskito by the name *dus arbiac* "gnawing of trees." Its origin is traced to the fact that the mother, while *enciente*,

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826 heard the peculiar sound produced by two trees rubbing against each other during high wind.

842 STERILITY AND ABORTION.—Sterility is considered a disgrace, and the average husband will abandon his wife if she is unable to bear children. Abortion and prevention of pregnancy are accomplished by the use of certain herbs. In general the Indian woman is very prolific, but infant mortality is also very high.

847 INFANTICIDE.—In former days babies of the female sex were often exposed and left to die, as they were supposed to bring ill luck. Male children are always received with great joy, which the father manifests by shooting off his gun. Deformed children were buried alive in olden days, as they were supposed to be possessed by an evil spirit, or to have been begotten by such one. A similar belief is held by many other tribes in both Americas and accounts for the total absence or scarcity of crippled persons in such regions.

847 Twins were also exposed, as they were said to be a proof of the wife's disloyalty to her husband; the latter considered that only one 845 of the two infants could possibly be his. If twins were of different sex the female was always killed. Lehmann (c: I, 405) states among the Miskito the red dog (*pdûan*) is the master of the twins, and that for that reason these Indians whip dogs at the birth of twins (*pdûnki*), but this report needs confirmation.

854 CHILD CARRYING.—The women carry their children in a long cloth which they sling over the back, tying the two ends together in front at the breast. This way the mother is not prevented from following her usual occupation, as both her hands are left free, while the child is firmly secured in a safe and comfortable position. The prevalence [142] of bowlegs among these Indians may possibly be ascribed to this manner of carrying the infants.

855 CARE OF CHILDREN.—The Indian child receives little attention from its parents, yet it rarely cries. The parents have, however, great patience toward their offspring, and they seldom chastise a naughty child. Should they, however, lose their patience and seize the whip, they may administer fearful beatings, but such cases are extremely rare. Lullaby songs are rarely heard, but the parents tell their offspring fables, legends, and fairy tales.

862 The last child is not generally weaned until the fourth year and sometimes even longer. I have observed cases among the Miskito where the young boys alternated their mother's breast with their father's tobacco pipe.

868 EDUCATION.—As the child grows up it is made acquainted with the occupations of its parents. The boy accompanies his father on hunting and fishing journeys as soon as he is strong enough to do so. The father makes toys for him, as diminutive canoes and paddles; later he obtains small bows and arrows in order to practice shooting at birds

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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalnin;* U.: *sumalnaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 763 [888]

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about. 761 763

The female relations of the deceased cut their hair off; according to Bell (a: 255; b: 90) this is done under the idea that no one should handle it after the dead person. In former days the Ulwa Indians used to cut their hair off also at the death of their wife (Wickham, b: 208), but nowadays the men of both tribes always keep their hair cut short. 765

The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialize by pronouncing its name. [775]

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765 In the evening succeeding the death of a person a sort of "wake" is celebrated, to which the entire village is invited. Plenty of food and intoxicants are served to the guests, and a cow is butchered for its meat in case cattle are raised in the neighborhood.

MOURNING.—When a death occurs in a Miskito village all the neighbors assemble, and the women begin to lament one after the other. First comes the turn of the near relatives, as the wife of the deceased person. She throws a large cloth over her head and sits at the side of the dead body, leaning over him to smell the scent, which is the equivalent to our custom of kissing. Then she begins a sort of crying song or dirge in which she eulogizes the departed, enumerating his good qualities, real or supposed. This song has but one tune and time, but the words are improvised. She asks him why he has left her, if she did not treat him well, if she did not love him enough, and what wrong she could possibly have done him. She keeps on as follows: Who will take care of myself and of your children now? You were such a good husband! You were such an excellent hunter! You never missed the mark and kept us always well supplied with meat! You were so skillful in making plantations; in handling the canoe, the gun, bow and arrow, ax, etc.! We are all so sad now and will never be happy again! Your children are always asking for you! She then menaces the one responsible for this calamity, for death is attributed to sorcery. As she keeps on in this manner, her feelings are worked up, and the final phrases are continually interrupted by sobs. After having lamented in this manner for about half an hour, she dries her tears and resumes her usual occupation as if nothing had happened. One of the other women will then cry over the dead body. This manner of mourning is repeated by the female relations for two weeks after the death of a person, twice a day, a little before daybreak and again at sunset. After this period it may be done by the mourning woman whenever she is sad and reminded of the dead.

Bell has recorded the following song of a Miskito girl from Rio Wawa, mourning for her dead mother; he gives it in English (b:91) and in Miskito (b: 312):

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Alas, mother, poor mother! Alas, mother, where have you gone?
Here are your children crying for you;
Yesterday we were talking together, but now you are lying there.
Alas, mother, did you go from us in anger?
Did we not love you?
Your husband sits outside with his head hung down.
Here the women are sitting with their heads covered,
All for love of you.
But you have abandoned us.
Alas, that I shall never see your face again;
That I shall never hear your voice again.

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The men never shed any tears at the death of their near relations, but they will break out in low lamentations. Upon the death of his wife the Miskito Indian will exclaim as follows: Why did you leave me? Who is going to cook my food now? Who is going to wash my clothes now? Who is going to raise your children? How unfortunate am I! I shall never be happy again! Your children are always asking for you!

This manner of mourning is a common occurrence at the Miskito villages. It is also practiced by the Indians in the Gran Chaco and the Guianas. The Sumu women will also chant eulogiums upon the deceased, but they manifest their sorrow in a much quieter manner.

BURIAL CUSTOMS

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Burial by simple inhumation is the present practice. The Miskito dress the deceased in his best clothes and place him in a canoe cut crosswise in two parts, one half of it serving as cover. The Sumu simply wrap the body in bark cloth, as did the Miskito in former days, according to Sloane (b: 279) and Jefferys (46). These authors state that the Miskito sewed the dead in a mat, and did not lay the body in the grave lengthwise, but placed it upright on the feet, with the face directly to the east. Nowadays, however, among both tribes the dead person is laid lengthwise on its back to a depth of 4 or 5 feet.

MISKITO BURIAL CUSTOMS.—The burial ground is generally a short distance from the village. While the corpse is being carried thereto the female relatives renew the mourning and try to injure themselves, but they are watched by the others and are not allowed to harm themselves seriously. Livestock is kept away from the burial ground, as the spirit of the deceased is liable to enter it and cause it to die.

Formerly all the personal property of the deceased, as his tools, ornaments, dogs, etc., were put in the grave, in order to assure him a livelihood in the other world. Division of labor continues in the other life, and archeological investigations from various parts of America have shown that spindle whorls are never found in the same graves as stone celts. The hair of the female relatives is also joined to the corpse. A pine-wood torch is also added in order to guide the latter during his long journey to the hereafter. A small canoe is put in the grave, for the voyage to the underworld has to be effected partly on water, and that country is surrounded by a river which has to be crossed with the aid of a dog. For that reason a dog was also killed at each burial. Nowadays all articles put in the grave are broken so as to prevent the stealing of them, but generally only the useless property of the deceased is buried with him, while the remainder is kept by his family. Formerly even his livestock had to be killed, and the plantations and fruit trees destroyed, so that the living should

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764 not "rob the dead," thus causing the latter's spirit to linger about doing all sorts of mischief. The property of a deceased is known by the name *platira* (M.) and *bawan, bawani* (S.).

According to Exquemelin (French ed.: II, 275) the Miskito also formerly killed the slaves and servants at the death of a chief, in order to serve their master in the other world, a custom found in ancient America among the civilized tribes from Mexico to Peru. Even his priest (*sukya*?) was put to death to be at his service in the hereafter. This author goes on to say that at such an occasion the Miskito had the intention of sacrificing a Portuguese slave who had lost an eye by an arrow shot. But the latter persuaded the Indians that only men without any physical defect would be allowed in the future world and that, besides, they were not paying due respect to the deceased by giving him as servant a one-eyed man when there were so many with two eyes who could be used for this purpose. To this the Miskito agreed and the Portuguese's life was spared.

A small hut is erected over the grave, whereto the women repair every day in order to light a fire and prepare food and drink for the deceased. These viands are renewed every day, and are supposed to be consumed by the spirit or soul (*isiñni*) of the dead person. In former days the quality of such food was apparently far superior to that found nowadays on the graves, for Exquemelin (Engl. ed.: 254) makes the following statement: "I have oftentimes with my own hands taken away these offerings and eaten them instead of other victuals. To this I was moved, because I knew that the fruits used on these occasions were the choicest and ripest of all others, as also the liquors of the best sort they made use of for their greatest regale and pleasure."

765 Secondary burials appear to have been practiced formerly by the Miskito. According to Exquemelin (Engl. ed.: 254; French ed.: II, 274) the widow opened the grave [86] of her husband about one year after burial. Owing to the great humidity the body would soon decompose. She scraped and washed the bones and dried them in the sun. Then she placed them in a *cubala*,[87] a certain pouch or satchel, which she had to carry on her back during the daytime, and upon which she slept at night. She had to keep this up for a whole year, after which she hung the bag with the bones to the post of her house for another year. After that period she was allowed to remarry. If she had no house of her own she hung the bones at the door of that of her next neighbor or relation. The above act was not performed if the deceased was a single man, but food was carried to his grave. The practice of scraping the bones was also performed by the Indian

[86] This author does not state where the corpse was buried in those days, but we learn from M. W. (309) that the Miskito buried their dead in their huts.

[87] *Kwala* is the Miskito name for cloth.

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woman if her husband was a buccaneer, but men were not bound to carry it out at the death of their wife. Exquemelin does not state what was done ultimately with the bones. The custom points toward the practice of endo cannibalism, which was widespread in South America, and which consisted of grinding up the bones of the deceased and consuming them in a drink. Exhumation has not been mentioned from the Mosquito Coast by subsequent travelers. 765

SUMU BURIAL CUSTOMS.—Our knowledge regarding the former burial customs of the Sumu is more rudimentary. Cremation and secondary urn burial appear to have been made use of occasionally; in the former case the ashes were placed in an earthen vessel, as did the more advanced tribes of the Pacific slope of Honduras and Nicaragua. The common people, however, were probably merely inhumed. 764

On account of the dense jungle the old burial grounds are difficult to discover. Sometimes they are indicated by low mounds which yield fragments of pottery and metates, or spindle whorls, greenstone beads, etc. A large one of these burial sites is found at the bank of Rio Punta Gorda, near its junction with Rio Pejivalle; smaller ones can be found in many other parts of the coast. In certain regions of the Atlantic slope of Honduras, apparently occupied formerly by the Paya, as at Bonito Oriental, Piedra Blanca, and Siriboya, there are high mounds surrounded by walls.

In Chontales (Nicaragua), which department was formerly occupied by the Ulwa, secondary burial was practiced; the remains were deposited upon the summit of a hill or in an artificial mound in the savanna. The spot was often marked with a cairn of loose rocks constructed in the shape of a parallelogram, varying greatly in size. The sides of these structures were either sloped or perpendicular, and the edge of the upper surface was furnished with a parapet. Fragments of rude statues placed on them have been found, and it would appear as if there were one or several large ones in the center and a small one at each corner. Boyle (a: 43–44) describes a very large cairn, measuring about 58 by 40 yards and close to 10 feet in height, which stood in the neighborhood of La Libertad on the summit of a mound 60 to 70 feet high. 765

Rogers (107) gives a short description of masks for the faces of the dead chiefs brought about 1775 from the interior of the Mosquito Coast, undoubtedly from the Sumu country. They were made of clay mixed sometimes with gold dust and were said to be the likeness of chiefs or other prominent persons who had been buried at such places. In many parts of America such face masks were used on mummies; we do not know, however, if the art of mummification was known on the Mosquito Coast. This practice had been observed by Columbus at Cariay (Atlantic coast of Costa Rica) in 1502 and was probably limited to men of rank. Rogers has de- 764 532

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764 532 picted eight of the above-named masks; most of them have their backs concaved in a cylindrical form, by which we might imagine that they were parts of sepulchral urns. (See also Roberts, pp. 299–300.)

775 CATCHING THE SOUL OF A DECEASED PERSON.—Upon the death of a person the soul (M.: *isiñni*) or "shadow," as the Creoles say, leaves the body and remains about the house. After the burial it is "caught" by the sukya and taken to the grave; otherwise it will roam about and do all sorts of mischief. This custom has been introduced among the Miskito by the West Indian Negroes; recently it has spread to the Twahka and Panamaka.

This action takes place at night by a very dim light. The task of the sukya appears to be by no means easy. Sometimes he fails to catch the soul on the first night and has to do everything over again on the following day. He throws himself into a state of ecstasy and then dances around the bed of the deceased, over which a white cotton sheet has been spread. Then he sits down in a hammock which has been slung near by and he communicates the messages received from the dead during his supernatural state. The latter might give him the names of the persons who owe him some money or have failed to return a borrowed object. If he owns some young trees, the fruits of which he has not yet tasted, he will order them cut down without any further delay. Toward daybreak, when all the people present are more or less drunk, for intoxicating beverages are served to all the guests, the sukya seizes some insect, generally a firefly or a beetle, which he pretends to be the soul of the deceased. He wraps it up quickly in the bed sheet or incloses it in a bottle and then takes it to the grave.

Some of these sorcerers are said to be able to catch the soul of Indians who have died far away from home. This is, however, a more difficult task, as the soul may keep him waiting for a whole week, until it condescends to be taken to its final resting place. Formerly the soul was supposed to enter animals or other objects belonging to the deceased, and these had to be killed or broken to drive the intruder out.

THE HEREAFTER

Both tribes believe in the immortality of the soul and its translation to a realm of happiness and bliss. Remains of this belief are seen in the burial customs, for certain objects are given to the dead which are indispensable to him during his long journey to that final resting place. Some Indians make the future existence dependent [177] on present conduct, but this idea has undoubtedly been borrowed from Christianity.

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The land of hereafter of the Miskito is far superior to the vale of tears in which we live; it is well stocked with all their favorite game, fish, and other food, as well as drink. Green turtles are plentiful and may easily be caught, and in the forests are large droves of peccaries and monkeys which may be killed at will. Fruit trees are continually in bearing and, like the other food plants there, do not need to be replanted. There are no other people there but Miskito; the paradise is unattainable to Sumu, Rama, Paya, and other tribes, or to foreigners.

JOURNEY TO THE HEREAFTER (MISKITO).—The following story, dealing with the soul's journey to the underworld or paradise, is well known to the Miskito inhabiting the Nicaraguan coast, but not those living on Rio Coco and in Honduras.

A Miskito, named *Nakili* or *Naklili*, had lost his wife whom he loved very much. He went to her grave and there suddenly saw himself in the presence of her disembodied soul (*isiñni*). The latter *was only about 2 feet high, and informed him of her starting now* her journey to the *Yapti-mieri*.[28] He wished to accompany her, but she told him that such a thing was out of the question, since he was still alive. But he insisted and was not to be persuaded to remain behind, and so they started out together. She led the way and turned into a very narrow trail, which he had never seen before.

They arrived at a place where there were many moths (*sampapa*) flying about. She was afraid of them and did not dare to proceed, but he chased them away and they continued their march.

After a while the trail led between two low pine trees (*ñiua*), which were so close together that the wife could barely pass; the husband, being still in his normal size, was unable to squeeze himself through, but merely walked around this obstacle. According to another version the two trees were constantly moving to and fro, annihilating those persons who had behaved badly on earth. Some again claim that the safe passing of this obstacle was merely a matter of dexterity.

They continued their journey and came to a precipice which was spanned by a bridge of the width of a human hair. Below there was a huge pot of boiling water attended by *sikla* birds. The wife being of reduced size and weight was able to walk over this narrow bridge, but *Nakili* did not find the distance across very great, and so he jumped it.

Then they arrived at a very large river, where there was a canoe paddled by four toads (*sukkia*).[29] This stream swarmed with a small variety of fish, similar to a sardine, and called *blim* (or *bilim*, *bilam*),

[28] Lit.: "Mother-scorpion," a sort of personified hereafter and heretofore.
[29] According to some Indians this canoe was paddled by a dog.

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which the soul took for sharks (*ilili*). On the opposite side they saw the country of the *Yapti-misri;* every one there appeared to be happy. The souls of those persons who had not led a righteous life were upset with the boat and devoured by the sardines. The wife was taken over in the canoe by the toads, while he managed to swim over.

On the other side they were received by the *Yapti-misri*, a very tall, stout woman with many breasts, to whom the inhabitants came occasionally to suck like babies. She appeared to be rather angry at *Nakili* for having come, and ordered him to go back to the earth again. He implored her to let him remain, as he loved his wife so much and did not wish to be separated from her. She agreed finally to let him stay.

In this country no one had to work; there was plenty of excellent food and drink, and there was no lack of amusements. But after staying there for some time, *Nakili* longed to go back to earth, in order to see his children again. *Yapti-misri* allowed him to go on condition that he would never return to the hereafter until after his death. She placed him in a huge bamboo rod which she deposited on the river. After a while he noticed from the high waves that he was on the sea, and finally a gigantic breaker threw him on the shore, just in front of his own hut.

JOURNEY TO THE HEREAFTER (SUMU).—After death the soul undertakes its pilgrimage to *Obul* or *Ubul* (lit.: "mottled dwelling"), that is, the paradise, which is situated under the earth toward the east, where the sun rises.

On its journey the soul is attacked by macaws (*dā awa*) and moths (*tapam yula*) which attempt to bite it; it defends itself with the aid of two sticks of wood tied together with cotton thread in the shape of a cross, and which are always joined to the deceased person before burial.

Then the soul is met by a gigantic worm, which devours the women who have not always been faithful to their husbands. Men are not molested by this monster, as they make themselves invulnerable by attaching to the body a coat of cockles (*ulamak*).

The road then leads along the abode of a small black lizard living on trees, and called *kasā*, which tries to catch the soul and deliver it to a toad (*muku*); the latter has a large pot with boiling water on the fire, and throws all the bad people therein. But the soul may easily escape from final destruction by offering some beads to the *kasā*, who is very fond of such ornaments, and by giving likewise some small present to the toad.

The next stage is a high, slippery hill, called *Uy Asak*, which has to be climbed. The relatives of the deceased smear the soles of his feet with beeswax (*balas*) in order to facilitate his ascending the hill.

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This obstacle overcome, the soul finally makes its entry into *Obul*, the land of plenty.[80] 775

THE FESTIVAL OF THE DEAD

The festival of the dead (M.: *sikro, sihkro;* S.: *sdñ*) is the most important of the bacchanalian orgies of these two tribes. Its real significance appears to be unknown to the large majority of the present-day Indians; it is certain, however, that it has some connection with the journey of the souls of the deceased to the hereafter. 765.

THE SIKRO OF THE MISKITO.—To most Miskito the *sikro* of to-day is only an occasion for merrymaking and getting drunk. Originally only one *sikro* was made for each deceased person, but nowadays the Indians repeat this feast several times in order to have an excuse for a drinking bout. The custom can still be observed among the "heathen" Miskito of the upper Rio Coco and of Honduras. In the remaining districts of the Mosquito Coast nearly all the Indians belonging to this tribe have been converted to Christianity.

The *sikro* takes place about a year after a death, or rather as soon as the field of sweet cassava, planted especially for this purpose, has come into maturity. Although the Miskito make a great variety of intoxicating drinks (*misla*), the one consumed on such an occasion is invariably prepared from cassava. The fermented root of this plant is generally kept in casks obtained from the foreign merchants, but in former days the drink was left to ferment in large homemade earthenware vessels (*sumi*). The expenses of the feast are borne by the relatives of the deceased, who will butcher one or two head of cattle for this purpose, but all the neighbors lend a hand at the preparation of food and drink, and they even help at the planting and reaping of the cassava.

All the men and many of the women from the neighboring settlements are expected to come, and they begin to arrive, dressed in their best attire, about sundown on the specified day. The festival lasts until all the food and drink has been consumed, that is, two or three days. The women keep apart by themselves, and do not mingle with the men, except in order to pass the calabashes of drink around from one of the guests to the other. Occasionally both sexes

[80] The Sumu never kill any of the various creatures which they will have to meet on their final journey. When they deprive a toad of its skin for the making of a drumhead, they do not kill this amphibian, but release it again afterwards, and give it a few berries from a certain tree as a payment for its skin. The parents also admonish their children not to ill-treat animals, especially such as may be useful to them on the voyage to the hereafter. Similar conceptions are met with among primitive Indian tribes in various parts of the Americas who have had little or no intercourse with Christians. [825]

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Occasionally both sexes

765 perform very "tame" dances which they have apparently learned from the foreigners.[1] One dance, which does not lack a certain grace, 535 is performed by the young women, forming a half circle. They place the left arm around the neck of their neighbor and perform slow movements of the body to the rhythm of calabash rattles which they hold in the right hand. Occasionally they utter a soft melancholy song.

Several young men are continually playing reed flutes or flageolets 765 (*bra*), while others beat a skin membrane drum (*kuñbi*) with the palm 533 of the hand. Most of the "music" performed consists of conventional imitations of the voice of animals or birds; the dancers accompany it by imitating the gait or the actions of the particular animal or bird.

765 Toward midnight two or three old men play on very long, stout bamboo flutes, which produce such an unearthly noise as to really scare a stranger. These instruments are said to be blown in order to direct to the feast two or three masqueraded figures which are supposed to come from the forest. As soon as the latter approach the hut all the women run inside, for they are not supposed to see them. The relatives of the deceased person immediately cover their faces with a cloth and then begin to lament and cry, for the masqueraded persons have some connection with the departed one. They try to injure themselves by knocking the head against the house posts, or by inflicting wounds on themselves with the aid of arms, rocks, or other objects, but the guests intercede and prevent them from harming themselves in a serious way. At a *sikro* on Rio Plátano I was witness when an old woman made a deep cut in her arm with the aid of an old, rusty machete. The maskers walk a few times around the hut, but after having been engaged in conversation by the *kukya* they return to the bush whence they had come. In order to induce them to depart some of the men make a strange noise on a flute (*yul*) made from the *kliswi* reed and having some beeswax applied to the mouthpiece. As soon as they have left the women dry their tears, and they are again as happy as before, for they know now that their deceased relative will within a short time arrive safely at the land of hereafter.

The head and shoulder piece of the masquerade dress is made of a piece of tanned skin or of the inner bark of certain trees; it is painted red and black. Holes are made in the part covering the face to correspond to the wearer's eyes. Dry grass is used to simulate hair, while a crinolinelike fringe of palm leaves depends from the shoulder piece, so that nothing but the legs of the wearer are visible. The headpiece is surmounted by an upright bar of light wood with the likeness (*lilka*) of a certain animal or object. All

[1] [At the festival of the dead – Analyst]

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these masks are known by the general name of *yapti*, "mother," yet one is male and the other female, while the third one (if there be one) is said to be the young. These figures are supposed to represent the spirit of some animal, it appears, and they had originally perhaps some totemistic significance. Of the various figures which may appear at a *sikro* I have recorded the following: *Twdina* (sawfish) *yapti*, *ilili* (shark) *yapti*, *krikam* (sea gull) *yapti*, *tilba* (tapir) *yapti*, *kyaki* (agouti) *yapti*, *pura* (above, over?) *yapti*, *sikса* (banana) *yapti*, and *bulbul* (cassava roasted in the ashes?) *yapti*.

The writer was present at a *sikro* celebrated in 1921 at a Miskito village situated at the mouth of Rio Plátano (Honduras), at which the symbol of the *twdina-yapti* appeared. The two large figures were said to be the father (*tisa*) and the mother (*yapti*), while the smaller one was the child (*luhpya*). Each one of these three figures was surmounted by a bar of balsa wood painted in red and black, and provided with teeth on each side so as to simulate the bill of a sawfish (*twdina*). On the larger figures this bar was about 4 to 5 feet long, 5 to 6 inches wide, and 3 to 4 inches thick, while the small one measured only 3 feet in length and 4 inches in width.

At another *sikro*, celebrated in the presence of the writer in 1921 at Tausin, on an island in Caratasca Lagoon, there appeared only two figures, male and female, of practically the same size, and called *pura-yapti*. The bars of balsa wood surmounting the masquerade dress measured about 3 feet; their upper part was carved in the semblance of a human head, on which an old palm leaf hat was placed. Sticks inserted at right angles represented the arms. Both figures were dressed and painted partially in red and black, and had wooden pipes in their mouths. The following morning the boys from the village were running about and playing with these masquerade dresses.

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After midnight, when the huge quantity of mishla has produced its effect, the men become very noisy and quarrelsome, and their actions are more or less irresponsible. It is disgusting to see them vomit on the floor and then go and drink again: Old grudges and rivalries are revived, old grievances raked up, and fist fights occur on the slightest provocation. Fortunately the women collect and hide all the weapons at the beginning of the orgy, which fact is already mentioned by Dampier (I, 10), and the fighters can not do each other great harm. Besides, the women try as hard as they can to reconcile the quarrelers, but owing to the state of excitement in which the men are, their mediation is often rewarded by blows. Finally the drinkers tumble down and remain on the ground as they fall. These festivals, however, never degenerate into the wild

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and indecent scenes which occasionally take place at the "wakes" of the Negroes who have settled on the Mosquito Coast.

THE SAU OF THE SUMU.—The various Sumu tribes call the festival of the dead by the name *sau*, which word also means "earth," "ground," "country," "world"; the Bawihka, however, call it *sikro*, as do the Miskito, and like the latter used to carry animal masks on that occasion.

The following details apply to the *sau* of the Twahka and Panamaka, the writer having been unable to obtain reliable information pertaining to that of the Ulwa. The intoxicating drink for this occasion is prepared from maize and is known by the name *puput* (lit.: "gray"). All the guests are smeared with black paint in such a manner that they are not recognizable. Members from other tribes are not admitted, but all the young Sumu from far away are expected to come. The females, being always connected with ceremonial impurity, are excluded from the festival itself, but they remain in a neighboring hut to prepare food and drink.

Before the beginning of the festivities the sukya goes to the dead person's grave and deposits there a calabash of *puput*. The drink is said to be consumed by the buried person and enter the latter's body by way of the navel. To this calabash the sukya attaches the extremity of a ball of cotton thread, which has been spun by the female relations of the deceased. Then he repairs to the hut where the *sau* is to take place, unwinding the thread as he goes along, and carrying it over the lower tree branches, for it must not touch the ground. If a river has to be crossed, a little canoe with a paddle is tied there to the bank. The distance from the grave to the house may at times reach over several miles. This custom is also found among the Talamanca Indians of Costa Rica and in other areas of both hemispheres.

During the night the sukya, who is the principal actor at the *sau*, practices incantations, and the spirit of the deceased appears, having found its way by the above-mentioned cotton thread. It is not visible to anyone but the sukya, who converses with it in a mysterious language and gives it the final instructions to be observed for the safe entry into the land of hereafter. Then the supernatural visitor departs. The feast lasts from two to three days, that is, when the thread is found to be broken, a sure sign that the soul has safely arrived at the presence of *Iwana* (*Itoki*).

The *sau* of the Sumu is in general less noisy than the *sikro* of the Miskito. The guests eat and drink continually, but they neither sing nor dance. Melancholy music is furnished by reed flutes (*bara*), cedar drums (*pantan*, *panatan*), and short fifes (*una*).

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MISCELLANEOUS BELIEFS REGARDING FICTITIOUS BEINGS SAID TO INHABIT THE FOREST AND THE WATER

Living in dark and gloomy forests, the limits of which are unknown to them, the ideas of the Indians naturally turn toward the mysterious and wonderful, and they people in their imagination the unexplored regions of the country with fabulous monsters, or *unta dukya* as the Miskito call them generally. 776

Dwarfs.—In certain parts of the forest may be found some dwarfs (M.: *swáin, almuk-sirpi;* S.: *asañ mōikni, asañ mōihka*) of the size of children, but they are considered entirely harmless, and an encounter with one of them is even held to bring good luck.

Wandering Jew.—The belief of the existence of a wandering human being, the *tawisti seri-ha* or *sawa-seri*, so named by the Paya, has also spread to the neighboring Twahka, who have translated the name into *tiñ-suba*, but it is unknown to the other tribes; the Miskito of Rio Patuca, however, appear to call this mysterious being *tismila*. This man continually travels through the world with one of his hands placed in a cooking pot from which he is unable to extricate it. From time to time he beats with the pot against the trees, thereby producing a deep thunderlike noise, in order to break the vessel and liberate himself, but all his efforts are in vain. When he still was a boy, he was in the habit of eating the best part of the food before mealtime, leaving only the cassava and bananas for the other members of the family. His parents frequently scolded him for doing that, but he would not listen to them. One day the cooking pot closed up at the very moment he had his hand inside, and he was unable to withdraw it. Since that time he travels continuously through the bush like the Wandering Jew.

Peccary owner.—The peccaries, especially the variety called warrees, are said to have a keeper or owner (M.: *wari dawan;* T., P.: *siwi daniwan;* U.: *sawi dakawan*), who inhabits the caves of the interior, and occasionally retreats thereto with all the animals under his custody. In former times he is said to have been visible sometimes, accompanied by a drove of very fierce, large, white warrees. In order to guide his animals to a good feeding ground, he places with each herd a pet bird (M.: *wari yula;* T., P.: *siwi turukma;* U.: *sawi turukma;* these words literally mean "companion of the warree"). This bird, which may generally be found around a drove of peccaries, feeds probably on the ticks or other parasitic insects living on these animals. The Indians do not dare to kill it, as by such an act they would incur the wrath of the peccary owner. Some details pertaining 776 825

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776 to this fictitious being are given by Bell (b: 221–224). I submit herewith a Sumu story dealing with the peccary owner, which I propose naming:

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THE ADVENTURES OF THE PECCARY HUNTER

539 A Sumu went out to the bush to hunt the white-lipped peccary (*Tayassu* sp.). Suddenly he came upon a drove of a white variety, called *sdûakaya*, with very long tails and tusks. All of them were very fat. Our Indian had never seen a specimen of this variety before, but he had heard of its existence from the older people, who had, however, never succeeded in killing one.

He stalked upon them, but at the very moment he got his bow and arrow ready to shoot the whole drove made off at great speed. He followed their trails, determined not to go home without one of them. After a while he caught up with them, and saw them feeding on the fruits of the hog plum tree (*Spondias lutea* L.), but again they made off all together when he was at the point of sending an arrow at them. This was repeated again and again, and our Indian was unable to make use of his arrows. Still he kept on following them.

Suddenly he saw the whole drove disappearing into a cave. He followed, although it was pitch dark inside, for he could smell and hear them. After a while he came to a wall of solid rock which blocked his passage. He then made a small incision under his tongue and applied a little blood crosswise upon the rocks. Immediately the latter receded and he was able to proceed. Again he could hear and smell the peccaries in front of him. This was repeated several times.

Finally the Indian saw a streak of light ahead of him and directly he found himself outside the cave in a strange country, which abounded in the various varieties of peccaries. The large white kind, the *sdûakaya*, must have been the favorite food of the inhabitants, for in every house they were preparing a specimen for the table. The people were not friendly toward our Sumu, and they resented his having come to their land. He explained to them how it all happened, and that he was anxious to secure some meat for his wife and children. They told him then that they were the owners of all the peccaries, and that occasionally they sent some droves to the Sumu country, so as to enable the inhabitants there to have some meat to eat occasionally. But the white peccary (*sdûakaya*), they proceeded, "is for our exclusive use and for that reason the Sumu have never been able to shoot any of them." The people fed our Sumu and gave him a whole white peccary to take back home to his family. But they warned him not to mention anything about his adventure, as that would cause his immediate death. Then he was told to close his eyes, and some one took him by the hand and led him away. After

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a little while, feeling himself alone, he opened his eyes, and looking around, he found himself only a few steps from his own house. 539

Upon getting home, his wife wanted to know where he had been so long. He refused to tell the truth for fear of the revenge of the people from the peccary country, and told her that he had been lost in the bush. But she noticed that he was hiding the truth and kept on insisting that something extraordinary must have happened for his having succeeded in killing a *sūakaya*.

Finally he agreed to tell. He sat in his hammock, while all the neighbors surrounded him to hear the details of his strange adventure, and then he proceeded to narrate everything that had happened to him since he left home. But the moment he finished his story he died.

WITCHES.—Certain people of either sex are supposed to be greatly addicted to witchcraft, and to be able to transform themselves at will into owls or "lechuzas" (M.: *imi yula* or *kimi yula;* S.: *yala möih*[91]). 754

Some bad people transform themselves into a smaller species of owl (T.: *yarak;* U.: *söi*) and in their zoömorphic form introduce themselves during the night into the huts of their enemies, when the latter are asleep, in order to carry off the small children. The Miskito do not participate in this belief.

CYCLOPS.—In the bush lives also a curious being, shaped somewhat like a giant human being, but having a head similar to that of a dog. It has only one eye, while its large mouth is at the navel. 776

WATER NYMPH.—The mermaid or water nymph (M.: *liwa;* T., P.: *was molhni;* U.: *was sirdi*) is an evil water animal, which occasionally causes snags and strong ripples where the water otherwise is very smooth. It drives the fish away so that the Indian can not catch anything, and it incites the alligator to attack the canoes and upset them. It also assumes the shape of a beautiful woman and walks on land to entice the young men down to the waterside, when suddenly it pushes its victim into the water and devours it. Its head is that of a human being, but the body resembles that of a fish. This monster is also said to inhabit the sea, where it occasions waterspouts and hurricanes; the Miskito living at the coast call it also *kabo wlaska* "sea spirit."

WAIWIN OR WAIWAN.—This name is applied by Miskito, Sumu, Rama, and Creoles to a black, doglike bush animal, with a nose shaped like that of the large anteater and with fiery eyes similar to balls of fire. It corresponds approximately to the "cadejo" of the Ladinos. Its claws rattle on the ground as it runs along with great swiftness. It spits fire and does not do any harm if left unmolested, but will throw down on the ground any one trying to stop it. There 825

[91] Lit., "people of the stars."

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825 is also said to exist a white variety. Bell (a: 254) describes it as a terrible monster, like a horse, but with "jaws fenced round with horrid teeth," whose native place is the sea, whence it issues from time to time to its summer residence on the hills, and at night roams about the forest in search of human and other prey.

ANTHROPOID APE.—On the unexplored mountain tops is said to be found a tailless anthropoid ape (*ulak*, *uluk*), reminding of the gorilla, orang-outang, or chimpanzee of the Old World. It is of erect position, about 5 feet in height, covered with black hair, and has the teeth turned backward. It is greatly feared, as it is supposed to carry off human beings of the opposite sex. This belief is also found among the other populations of the Mosquito Coast; the Rama and the Creoles call this ape *yohó* or *yuhó*, while the Paya and Ladinos apply to it the Spanish-Mexican name *sisimite* or *chichimite*.[82] Some Indians claim that this mysterious being has been seen several times during the last 20 years around the Guarunta Mountains, which extend northward of the lower Rio Coco. C. Acuña refers to men from South America with their feet turned backward. (Relation of the Great River Amazon. London, 1698, p. 158.)

KASWAKI, WAKUMBAI.—There is a wasp-eating bird, traveling in flocks, which is greatly feared by the Indians. It gives out an unearthly cry, somewhat like a hoarse human voice, and is known by the onomatopoeic names of *cacao* (Spanish), *katâuhkatâu* (M.), *kutâu* (T.), and *katâuhki* (U.). The Miskito also call it *pnamaka yula* "companion of the Panamaka," while the Creoles have given it the name *buckra quam* "white man's guan."

The Indians do not dare to kill this bird, as that would bring about the sudden appearance of a bluish, horse-shaped ghost (M.: *kaswaki*; S.: *wakumbâi* [83]); the latter has a single leg in front and two behind, and travels through the air mounted by its owner. The simple sight of this supernatural being is supposed to cause death.

LUHPALILI (M.), TISNINI (S.).—This is a long quadruped of short stature, somewhat resembling a weasel, of a pretty black color, but with spotted head. It does not harm any human being, but is greatly feared by all animals, large and small. It chases especially

[82] Regarding the alleged discovery of an anthropoid ape on the borderland between Colombia and Venezuela see Georges Montandon, Découverte d'un singe d'apparence anthropoïde en Amérique du Sud, in Journal de la Société des Americanistes de Paris, Paris, 1929, fasc. I, pp. 183–195, and fasc. II, pp. 411–412.

[83] This name appears to be phonetically related to the word *akumboûs*, by which term the Island Carib, in the language of the males, called the spirit of a person (C. de Rochefort, Histoire naturelle et morale des Iles Antilles de l'Amérique, Rotterdam, 1665, p. 471).

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larger beasts, like the jaguar and the puma, and kills them by introducing itself into their stomach.

WATER TIGER.—The water tiger (M.: *li lamya;* S.: *was nawa*) is supposed to be a manateelike animal, but covered with otterlike, glossy hair and a mane. Different species are said to exist, which have the same variety of color as the various species of Felis, the black variety being, however, the most common. This beast has webbed feet and walks awkwardly on land, but it is very swift in the water. It is found chiefly in the larger rivers among the rocks, and will devour any one swimming in the neighborhood or falling into the water; domestic animals and even men are said to have occasionally fallen victim to it. The Indians claim to have shot at it, but never succeeded in killing a specimen.

GIGANTIC BOA CONSTRICTOR.—A very large waula or boa constrictor (M.: *wûla tara;* T.: *wûla;* U.: *wayil*) with two horns on the head like a deer [84] is said to inhabit certain large lagoons in the pine ridges, far away from the nearest Indian village. It is claimed that the common waula or boa turns into such a monster when it reaches old age, and that it then retreats into deep lagoons. Man has no power to kill such a boa constrictor, as bullets have no effect on it; it can be destroyed only by a stroke of lightning.

The creeks leading to the lagoons inhabited by the monster are generally rich in all sorts of game, for no one dares to ascend them. It is claimed that in case anyone should be foolhardy enough to paddle up such a creek, presently a rumbling of thunder is heard; then the water reverses its course, flowing at a tremendous speed back to the lagoon directly into the mouth of the boa constrictor, which swallows the canoe with the intruder. The boat-bill heron (M.: *ukaka;* S.: *awahta*), a most uncanny night bird, is said to be found at the mouth of such creeks in order to warn off intruders.

FABLES OR TALES DEALING WITH BEASTS AND BIRDS

The Miskito know a great number of tales in which animals and birds act, think, and talk like human beings; they are supposed to possess spirits and to live, eat, drink, love, hate, and die just like the Indians.

These fables remind somewhat of the adventures of Anansi—a sort of god or culture hero—of the Gold Coast; or, Turtle of the Slave Coast; or, Hare (the Brer Rabbit of the United States Negroes) among the Bantu. Heath (a: 52) has drawn attention to the re-

[84] For this reason the Ladinos call it "masacuate" (from the Mexican *mazatl* "deer" and *coatl* "serpent").

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538 171 semblance of these fables with the "anancy" or "nancy" stories [95] of Jamaica, so that one can hardly doubt a common origin, and these stories are certainly African.

The following Miskito fable has been given in the Indian tongue by Berckenhagen.[96] I submit herewith the English translation thereof under the title:

WHY THE HOWLING MONKEY NEVER DESCENDS FROM THE TREES

538 The tapir and the howling monkey went together into the forest. The tapir was foolish enough to play on a flute which he had inherited. When the howling monkey heard that he asked to buy the flute, but the tapir refused to sell the instrument, and kept on playing it. Then the howling monkey had an idea and he said to the tapir as follows: "As you are unwilling to sell the flute, just lend it to me for a moment to try it; whenever I shall have a flute I will also let you have it." Thereupon the foolish tapir handed the flute to the monkey. Immediately the latter hurried up a tree, whence he kept on blowing the flute without stopping. The tapir then wanted his property back, but the monkey paid no attention to him. Thereupon he became very angry and ran hither and thither in the water and among the spiny vegetation, but the howling monkey kept on playing the instrument. The tapir then decided to lie in wait for the howler, determined to kill him wherever he should find him on account of the flute. For fear of that the howling monkey does not dare to descend from the trees, not even in order to drink, and he quenches his thirst with the moisture from the leaves of the vegetation.

Beware of giving away your inheritance.

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[95] *Anancy* or *ananzi* is the term for spider in the Chi language of western Africa; this arachnid plays a great rôle in the larger part of the folk tales of the West coast of Africa from Cape Verde to Cameroon. The name "anancy story" is applied nowadays by the Jamaican Negroes to any legend, myth, or fairy tale which is being told at night, especially during a "wake." Our rural European populations likewise believe that a real ghost story ought to be told at night around the fireside.

[96] Grammar of the Miskito Language, by H. Berckenhagen. Bluefields, Nicaragua, 1894, p. 81.

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GLOSSARY

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AGOUTI.—A savory rodent (*Dasyprocta* sp.), called "guatuso" by the Ladinos and "coney" by the Creoles.

ANANCY STORY.—An African story having the mythical spider, or ananci, as hero.

ANNATTO.—A shrub or small tree (*Bixa orellana* L.), also known by the Spanish name "achiote" or "achote."

BABOON.—The Creole name for the howling monkey (*Mycetes* sp.); it is also used in British Guiana.

BALSA.—A bombaceous lightwood tree (*Ochroma lagopus* Sw.).

BARBECUE.—To smoke-dry; also the name of the wooden stage upon which the meat is laid to be smoke-dried; also a crude wooden stage erected by the axman to stand upon when engaged in cutting down large trees.

BÁTANA (Miskito: *batana* "fat," "oil").—A hair oil made by the Miskito Indians of the kernel contained in the seeds of the oil palm (*Elaeis melanococca* Gaertn.).

BATEAU.—A large river canoe.

BIJAGUA.—A marantaceous plant (*Calathea insignis* Peters), the large leaves of which are used as wrapping paper; the Creoles call it by the Miskito [illegible] *waha*.

BOCATORA.—Creole name for the yellow fresh-water turtle.

BRATARA (Miskito: *bratara*).—Creole designation for a species of bamboo.

BREADNUT TREE.—A moraceous tree (*Helicostylis ojoche* K. Sch.); it is also known by the Spanish name "masica."

BULPIS.—Miskito name of a skin disease which is very common among the Indians.

CALABASH.—The fruit of a common tree of the Bignonia family (*Crescentia cujete* L.).

CASSAVA.—A valuable food plant (*Manihot* sp.).

CAY.—Island, not necessarily marine, but applied to islets in streams and even to clumps of vegetation; the Miskito use the word *dakura* in the same manner.

CHIGOE.—A species of flea (*Sarcopsylla penetrans*) which penetrates into the flesh and may cause painful sores.

COHUNE RIDGE.—Area dotted with cohune or corozo palms (*Attalea cohune*); the land of such districts is very fertile.

CRAFT.—A small seagoing canoe.

CREEK.—Applied to any tributary of a river.

CREOLE.—Applied to native Negroes, Mulattoes, or Zambos of English speech.

DORY (Miskito: *duri*, *dori*).—A keeled canoe.

FALLS.—Applied also to runs and rapids.

GIBNUT.—Local English name for the paca.

HAULOVER.—Narrow neck of land separating two water sheets, so called from the habit of hauling canoes over them.

HICATEE.—Creole name for the black fresh-water turtle.

HULERO (Local Spanish: *hule* "rubber").—A rubber collector.

ISHWILLY (Miskito: *islu*).—A species of edible lizard.

ISLAND.—*See* "Cay."

JIGGER.—*See* "Chigoe."

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JOHN CROW.—The black vulture or turkey buzzard.

LADINO.—Applied to the Spanish-speaking Central Americans; the Creoles call them "Spaniards."

LION.—Common term for the puma or cougar.

MACHETE.—Spanish name for a heavy cutlasslike knife.

MACLALA (Miskito: *maklala*).—Creole name of a small species of lizard.

METATE (Aztec: *metlatl*).—Spanish name for a slightly concave stone on which maize is ground with the aid of another stone shaped like a rolling-pin.

MISHLA (Miskito: *mísla*).—General designation for the fermented beverages of the Indians.

MOLINILLO.—Spanish name for a small stick used to stir a beverage made from ground cacao and maize.

MOUNTAIN COW.—Common name for the tapir.

NANCY STORY.—*See* "Ananey story."

PACA.—A very savory rodent (*Coelogenys paca* or *Cuniculus* sp.), called "tepescuinte" by the Ladinos and "gibnut" by the Creoles.

PEJIVALLE.—A species of palm (*Guilielma utilis* Oerst.), known to the Creoles by the Indian name *supa*.

PINE RIDGE.—Area dotted with pine trees (*Pinus tenuifolia* Benth.).

PITA.—*See* "Silk grass."

PITPAN.—An unkeeled canoe, used for river travel.

QUAM (Miskito: *kwamu*).—Creole name for the large guan (*Penelope* sp.).

RIDGE.—Zone or belt of vegetation; does not imply elevation.

SILK-COTTON TREE.—A gigantic bombaceous tree (*Ceiba pentandra* Gaertn. or *Bombax* sp.).

SILK GRASS.—A bromeliaceous plant (*Karatas plumieri*), called "pita" by the Ladinos.

SNOOK (Dutch: *snoek* "pike").—A large eatable fresh-water fish, resembling the European pike and equally voracious.

SPANIARD.—*See* "Ladino."

SQUASH.—Local English name for the coati or pisote (*Nasua narica*); the name is also met with in British Guiana.

SUKYA.—The shaman or priest-doctor among the Miskito and Sumu.

SUPA.—*See* "Pejivalle."

TAMAL.—A dish made of crushed maize, which is wrapped in large leaves and boiled in water.

TANIA.—A valuable food plant (*Xanthosoma sagittifolium* Schott.).

TIGER.—Common name for the jaguar.

TOMAGOFF (Spanish: *tamagás*).—A common poisonous snake.

TUBA.—Miskito name for a food fish found in almost every stream.

TUNU.—Miskito name of a tree closely allied to the rubber tree (*Castilla* sp.), the bark of which is pounded into cloth; also applied to any kind of bark cloth.

WABUL.—A nourishing drink made of mashed green bananas.

WAHA.—*See* "Bijagua."

WAIKA (Miskito: *waika* "cousin" or "friend").—Nickname given in British Honduras to all Miskito.

WARREE (Miskito: *wari*).—The white-lipped peccary (*Tayassu* sp.).

WAULA.—Miskito name for the boa snake.

WILD CANE.—A member of the grass family (*Gynerium saccharoides*).

YAM.—A valuable food plant (*Dioscorea* sp.).

YUMU.—Miskito name for a sort of stomach ache.

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THE CARIBBEAN LOWLAND TRIBES: THE MOSQUITO, SUMO, PAYA, AND JICAQUE

By PAUL KIRCHHOFF

INTRODUCTION

M
101 The modern *Paya* and *Jicaque* enclaves in the Caribbean Lowlands may
171 not all be the descendants of the people so named by the first explorers
177 (maps 2 and 5). It is possible that the culture of the people first discovered on the coast was similar to that from which the present-day *Mosquito* and *Sumo* culture has evolved, although the north coast probably had culture traits that differed significantly from those of the *Mosquito* and *Sumo*. It is impossible to describe the post-Conquest changes of the culture of the *Paya* and *Jicaque*. It seems reasonably certain, however, that during the past 400 years the east coast people and the people now known as the *Paya* and *Jicaque* have converged culturally. We can, then, describe these peoples as a unit, although hypothetically their cultures have developed out of the ruins of a more complex aboriginal
G background.
177 Less important but significant features of the culture may be ascribed
175 to the contact with the *Black Carib* Indians, who were brought to the Bay Islands in 1796 and whose descendants have settled on the mainland. The importance of the early Negro influence has already been noted.

CULTURE

SUBSISTENCE ACTIVITIES

M
241 **Farming.**—A type of slash-and-burn agriculture is employed by all tribes. Every season the men clear new farmlands and burn the slash. Planting and cultivating is done with a digging stick. This is woman's work, except among the *Jicaque* (Von Hagen, 1943), and the women also harvest the crops. Some fields have combinations of crops, such as maize, beans, and peanuts; others are reserved for single crops, especially the tubers.

G A list of agricultural products may be found below. Sweet manioc,
[241 an important *Mosquito* crop, is grown by all tribes. Bitter manioc, prob-
177] ably introduced by the *Carib*, is important to some *Paya* and *Jicaque*.

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241 Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulua*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

411 **Hunting.**—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

214 LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

262 AMERICAN ORIGIN:

- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Eddoe (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Bean (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Pataste.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Usi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

FOREIGN ORIGIN:

- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

224 Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

226 **Fishing.**—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

[84] [278]

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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

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342 time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams.

352 Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built [354] of three logs on slightly raised mud platforms inside the houses. Stored 415 near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

291 Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still [177] worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

302 Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated [301] theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

301 Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [967]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

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Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

Weapons.—*Mosquito, Sumo,* and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque,* an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella.* Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib,* and both types are used by the *Cuna* and *Chocó.*

POLITICAL ORGANIZATION

Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

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Among the *Mosquito* and *Sumo* a man who has been wronged is considered a coward if he does not avenge himself. If revenge fails, both the offended man and the perpetrator of the offense are supposed to commit suicide. A thief, when caught, must return double the amount stolen. A creditor may help himself to his debtor's property, or he may destroy the property of a third person, in which case the debtor must pay the damage (*Mosquito*). An adulterous wife is beaten and forced to reveal the name of her lover, who is fined. A murderer is killed, unless he commits suicide, and his memory is dishonored. There is, however, no dishonor in poisoning an enemy, the method employed for most murders. 627 681

SOCIAL ORGANIZATION

A man and woman may agree to marry, or, more rarely, the girl's parents may make marriage arrangements without her consent. Child betrothals are common. Cross-cousin marriage is frequent, but marriage between parallel-cousins and closer relations is forbidden. *Mosquito* and *Sumo* chiefs and shamans have several wives, and the *Paya* of Río Platano and Río Paulaya practice polygyny, as do the *Jicaque*. 582 [595]

Before marriage a man must pass through various ordeals, pay the bride's family an agreed sum, and prepare a field for his prospective wife. The wedding is a simple ceremony. The levirate and sororate are practiced, and the many possible exceptions to this rule are adjusted by payments. A man may abandon his wife if she is barren. Divorce is accomplished by means of payments to the families of offended parties. The woman always keeps the children. Among numerous relationship taboos are the important mother-in-law taboo and the prohibition on a man's speaking to his sister-in-law and to other close female relatives by marriage. 583 [587] [586] 603

LIFE CYCLE

Childbirth.—The *Paya* and *Mosquito* build special confinement huts; the *Sumo* partition off a corner of the house. During parturition the mother is aided by another woman who cuts the cord with a piece of bamboo. The afterbirth and umbilical cord are buried. Among the *Paya* a midwife is regarded by parents and child as a blood relative. This belief is said to have originated among the *Mosquito* and diffused to the *Sumo* and *Paya*. The second of twins and deformed children are killed (*Mosquito* and *Sumo*). Some female children were killed at birth. 844 [847]

Sumo and *Mosquito* women bathe immediately after bearing a child, *Paya* women on the third day. *Sumo* women take a steam bath but use no special structure; in other tribes they bathe in the river. This bath ends a period of ritual impurity. *Mosquito* women, however, are considered impure for one or two weeks. Women also observe a special diet. The return of the mother to the house is celebrated with a ceremony. 846

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Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

According to Von Hagen (1948), Mosquito death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

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773 same way that manioc is planted. Some of the tribes recount a myth of a
776 great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

775 The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

776 The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with
789 innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

756 Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may
755 succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs
[778] knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

756 A shaman may also prophesy the future or determine the route hunters
[787] should take in order to find game. By conjuring, a shaman may cause
[754] harm to come to people. A shaman may be retained by a person to eliminate an enemy.

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PLATE 31.—Sumo and Mosquito Indians, Nicaragua. *Top:* Sumo man. *Bottom:* Mosquito village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

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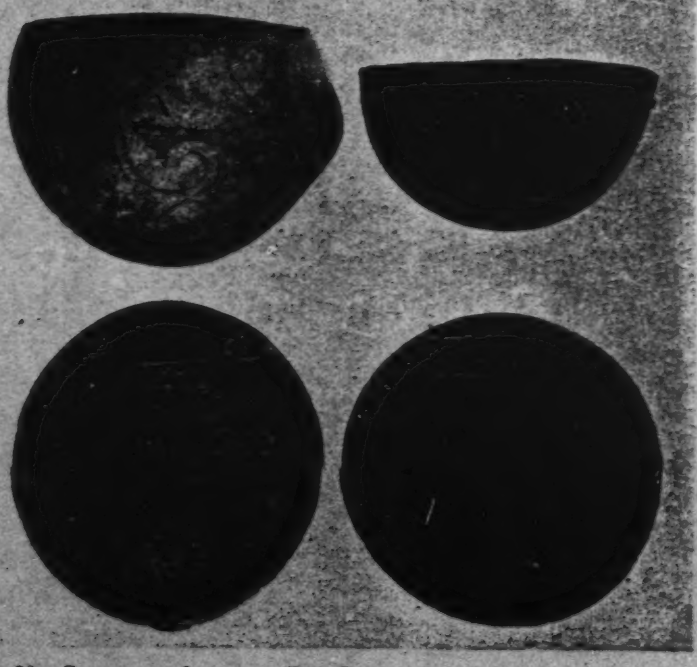

PLATE 36.—Sumo manufactures. *Top:* Beadwork. *Bottom:* Decorated gourd bowls. (Courtesy American Museum of Natural History.)

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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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[For a summary of the culture of Paya and near-by groups, see 2: Kirchoff, SA15 Mosquito.]

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The Health and Customs of the Miskito Indians of Northern Nicaragua: inter-relationships in a medical program

by

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EDICIONES DEL INSTITUTO INDIGENISTA INTERAMERICANO
MEXICO, D. F.
1946

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PREFACE

114 This medical survey and the health program connected with it was conceived by Mr. John Collier, who was Commissioner of Indian Affairs, Dr. Manuel Gamio, the Director of the Inter-American Indian Institute, and the Committees of Health and Sanitation of the National Indian Institutes of the United States and Nicaragua, and the Office of Inter-American Affairs.

121 The primary purpose of this study was to ascertain by what measure a health program could be initiated in a sequestered low-land tropical region for inhabitants who were autoctonous Indians to that area. The survey and the program were by no means complete since the main efforts were directed to the salient problems pertinent to the health of the people. Furthermore, considerable emphasis was given to the customs and habits of the Indians since any program in order to survive must be fitted into the lives of the people and the circumstances of the local situation. And, since the writer was specializing in the field of nutrition, the subject received disproportionate study.

122 123 The limitations of this study can be set forth. The first of these was the short time spent in the Coco Basin, a period of two months hardly being sufficient for a medical survey. The second was that no specific exhaustive anthropological method was used to study the social behavior of the Indians. But this second limitation is of no great consequence since the procedures ordinarily employed have not as yet attained quantitative values. But time should have been taken to gain a further insight into the views which these Indians held with respect to medical care. So far the authors' meagre observations form the only data from which to infer conclusions; certain "single methods" were employed and it is not too sanguine to state that still more important factors in the life, as it affects Public Health of these Indians are yet to be ascertained. Without, however, anticipating future inquiries, there is presented herewith those factors, medical and social, which the investigator deemed as sufficient in quantity to allow a recommendation for the health program of the Miskito without disrupting the social values of these people.

[p.3] [p.2 has no text material]

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The ideal procedure would have been to have had a team composed of various specialists, medical, sociological and anthropological, working together in a cooperative way in a thorough study of the Miskito Indians.

It must be acknowledge that we were fortunate enough to find one physician who had established himself over a period of years in the area in question. This fact made the work much easier and obviated the use of time to form contacts with Indians. This made it possible to have the work continued with a reasonable assurance of success.

The writer wishes to thank the members of the sponsoring committee: Dr. Clark H. Yeager, Mr. Ernest E. Maes, Dr. J. R. Murdock, Mr. Watson Davis, Mr. J. E. Johnson, Miss Sally Lucas Jean and Lt. Comdr. A. H. Leighton, M. C. USNR. He also acknowledges the guidance of his Commanding Officer, Capt. E. G. Hakansson, M. C., USN, who has had considerable experience in the study of tropical disease. One cannot but praise the unselfish devotion of Dr. David A. Thaeler, who has lived for many years in Central Nicaragua, and who has consecrated his career to the health of the Miskito Indians. Thanks are given also to Dr. Leonard Rosenfeld, Dr. Lorenzo Guerrero and Col. Luis Manuel DeBayle, for their generous assistance. The study, furthermore, was dependent on my associates, Mrs. Angela S. McCutcheon, Dr. Leopoldo Navarro, Dr. David Ocon, and Dr. H. Fonseca, who gave much of their time in the field survey.

Appreciation is expressed to Wyeth Incorporated, who generously supplied many of the drugs used in this survey and who defrayed many of the technical expenses of this study.

HISTORICAL BACKGROUND

The eastern coast of Honduras and Nicaragua was discovered by Columbus in 1502, during his fourth and last voyage to the New World, when he was proceeding from Trujillo in Honduras to Nombre de Dios in Panama. However, he did not come in direct contact with the Indians of this area.[1] In the course of the following years the Spaniards endeavoured to take possession of this territory but the natives resisted most of the efforts of the colonisers. The Spaniards were chiefly in quest of loot but since gold was not found and the Indians gave them no end to trouble they centered their interests and energies upon the Pacific Coast.

Vague mention was made of the Atlantic seaboard Indians by Gon-

[1] Conzemius, E. Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicaragua. Smithsonian Institution, Bull. 106, 1932.

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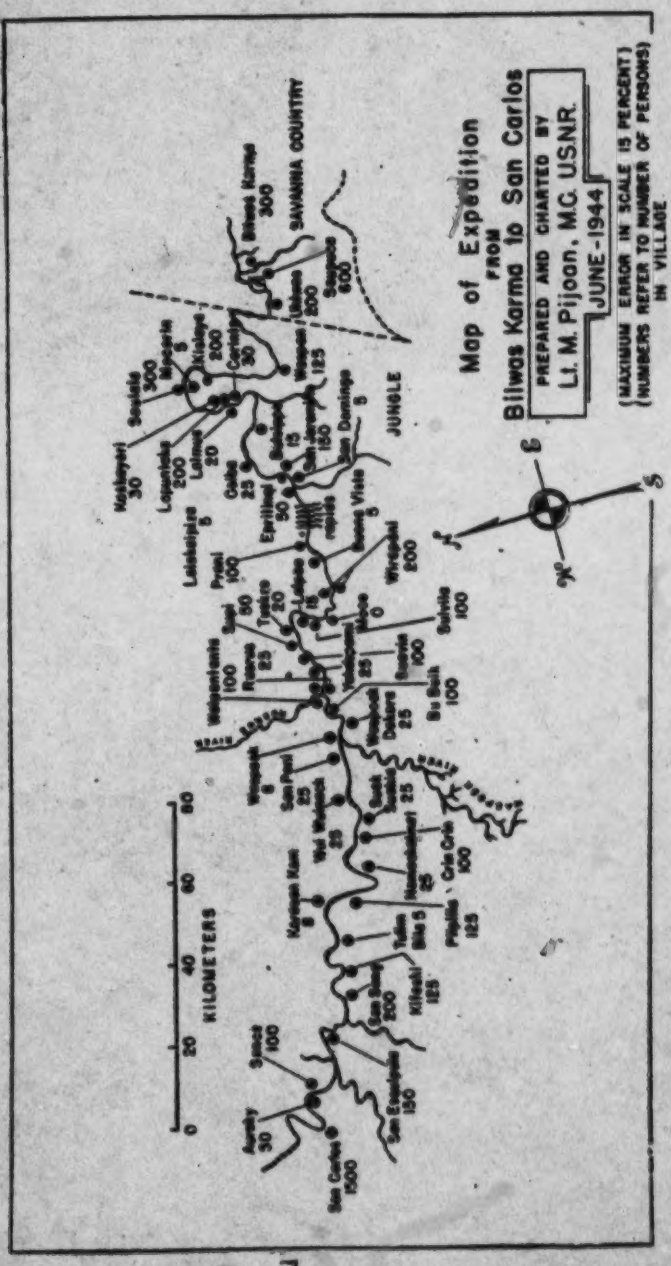

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114 Vague mention was made of the Atlantic seaboard Indians by Gon-
175 zalo Fernández de Oviedo (1478-1557) who was residing temporarily on the Pacific Coast of Nicaragua. A better account was given by the Franciscan missionary Espino[2] who had lived on the eastern coast during the year 1667-1668 (Río Patuca). It was during this period that the English entered into friendly and commercial relations with Indians; British traders arrived with increasing frequency and eventually garrisons were established. During this period there was also considerable trade with English buccaneers. The author of the first scholarly work on buccaneers, A. O. Exquemelin (English: Esquemeling; French: Oexmelin), came to the West Indies in 1666 and visited the Mosquito Coast of eastern Nicaragua in 1671. He had joined the buccaneers and had apparently assumed the function of barber-surgeon. It was, at any rate, in this capacity that he accompanied Morgan on his famous raid on Panama in 1671.[3] Exquemelin's original work in Dutch (Amsterdam, 1678), later translated into German (1679), Spanish (1681), English (1684), and French (1686), not only forms the basis for all of the popular accounts of the Seventeenth Century buccaneer captains but yields important descriptive information of the places he visited, especially the Mosquito Coast. Following Exquemelin, numerous other early historiographers have made accounts of the territory (vide: Dampier[4] Raveneau de Lussan[5] Sloane[6]).

175 In 1786 by virtue of a treaty with Spain, Great Britain agreed to yield the territory and to recognize the sovereignty of the King of Spain over it.[7] Somehow the Spaniards were unable to maintain a foothold in this area, a situation presumably due to the persuasive power of the English over the Indians in encouraging hostility towards the new government. In 1821 the States of Central America declared their inde-

[2] Espino, Fray Fernando. Relación Verdadera de la reducción de los Indios infieles de la provincia de Taguisgalpa, llamados Xicaques, cuyos operarios han salido, y salen desta provincia del SS. Nombre de Jesús de Goatemala, desde 1612, hasta el presente año de 1674, Guatemala, 1674.

[3] Exquemelin, A. O. De Americaensche Zee-Rovers, Amsterdam, 1678; Amerikanische Seeraüber, Nurnberg, 1679; Piratas de la América, Kola, 1682; Bucaniers of America, London, 1893; Histoire des Aventuriers qui se sont signalez dans les Indes, 2 vols., Paris, 1686.

[4] Dampier, William. A New Voyage Round the World. Fourth edition, 2 vols., London, 1699.

[5] Raveneau de Lussan. Journal du Voyage fait à la Mer du Sud, par les Flibustiers de l'Amerique en 1684 et années suivantes. Paris, 1689.

[6] Sloane, Sir Hans. A voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica, etc. 2 vols. London, 1707-1725; A New History of Jamaica from the earliest accounts, etc. Second edition, London, 1740.

[7] Stout, Peter F. Nicaragua: Past, Present and Future. Philadelphia, 1859.

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pendence from Spain and the English authorities from Jamaica renewed their friendly relations with the Indians. In fact, one of the chiefs from the area was crowned with solemnity by the British at Belize, British Honduras, and made king, thus reestablishing a British protectorate system. The "Mosquito" (Miskito) Kingdom in those days included the whole Atlantic Coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, a coastline of 700 miles.[7] However, in 1847 the territory became restricted to the territory between Cabo Honduras and Río San Juan, the jurisdiction of which was under British colonials. During these years under British supervision Orland W. Roberts,[8] an active trader on the eastern coast of Nicaragua, gave an accurate account of Miskito Indian customs. Reports were also given by Young,[9] Fröebel,[10] the most important being the text by Bell,[11] who lived in the territory from 1846 to 1862. From 1863 to 1868 John Collinson, a civil engineer, made two voyages to this coast and left an account of his travels.[12] H. A. Wickham,[13] (1867-1868) made a collection of birds from Río Escondido and Pearl Lagoon; P. Levy made researches for the Nicaraguan government[14] and other studies were made by the Swedish zoologist Bovallius,[15] and by K. Von Girsewald, [16] B. Mierisch,[17] and K. Sapper, who obtained a series of ethnographical specimens for the Stuttgart Museum.[18]

Inasmuch as there is a considerable admixture of Negro with the Miskito Indians it may be well to examine the possible reason for this

[8] Roberts, Orlando W. Narrative of Voyages and Excursions on the East Coast and in the Interior of Central America. Edinburgh, 1827.

[9] Young, Thomas. Narrative of a Residence on the Mosquito Shore, During the Years 1839, 1840 and 1841. London, 1895.

[10] Fröebel, Julius. Aus Amerika. Erfahrungen, Reisen and Studien. 2 vols. Leipzig, 1857-1858.

[11] Bell, Charles Napier. Remarks on the Mosquito Territory; its Climate, People, Productions, etc. Journal of the Royal Geographical Society, 1862, 32, 242-268. London.

[12] Collinson, John. The Indians of the Mosquito Territory. Memoirs of the Anthropological Society of London. 1870, 3, 148-156. London.

[13] Wickham, H. A. Notes of a Journey among the Woolwa and Mosquito Indians. Proceedings of the Royal Geographical Society. 1869, 13, 58-63. London.

[14] Levy, Paul. Notas geográficas y económicas sobre la República de Nicaragua. Paris, 1873.

[15] Bovallius, Carl. Resiai Central-Amerika (1881-1883) Upsala, 1887.

[16] Girsewald, K. Von. Sechs Monate in Nicaragua. Braunschweig, 1896.

[17] Mierisch, B. Eine Reise nach den Goldgebieten in Osten von Nicaragua. Petermanns Mitteilungen. 1893, 39, 25-39. Gotha.

[18] Sapper, K. Reise auf dem Rio Coco (Nordlickes Nicaragua). Globus, 1900, 78, 249-252, 271-276, Braunschweig; Proceedings of the Nineteenth International Congress of Americanists, 1917, 206-210.

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In 1875 at the time when the relationship of Miskito and Sumu languages was still unknown, Zúñiga Echenique[19] considered the Miskito Indians as the offspring of fugitive slaves with *Twahka* women (see appendix A). Of the existing Sumu tribes today the *Bawihka* is the one wich linguistically and ethnologically is the closest to Miskito. The *Bawihka* formerly occupied the area of the coastline where the first Europeans made contact. The fact that Echenique had suggested that the Miskito were derived from slaves and Indians and the fact that the *Bawihka* were on the coast induced Conzemius[1] to deduce that intermarriage between Negroes and Indians, an ordinary occurence today, was a possibility in earlier times.

In 1641 a slave ship was wrecked off Cabo Gracias a Dios. The Africans were on a ship commanded by Lourenço Gramalxo.[20] While on the high seas the Negroes revolted and mastered the ship and not knowing navigation allowed the vessel to be carried by trade winds, where it became wrecked on the Mosquito keys. The Negroes reached the mainland and were made slaves by the Indians. However, they were allowed to inter-marry and their children became free members of the tribe. There appears to be some controversy as to the owner of the vessel and the year it foundered.[21 y 22]

As a result the Miskito from Cabo Gracias a Dios to Sandy Bay developed an admixture of African blood. This Mixture was enhanced by the coming of other refugee slaves and the more recent immigrations of Negroes and mulattoes from the West Indies. The extent to which the Indian language was influenced by the African newcomers is unknown; the vowel scale of many people in certain villages is the same as the Jamaican creole dialect.[23 y 24]

In recent times important contributions with regard to the Miskito

[19] Zúñiga Echenique, Melquisédec. Descripción geográfica del departamento de la Mosquitia, practicada en el año de 1875. Madrid, 1905.

[20] Vide: Peralta, M. M. Costa Rica y la Costa de Mosquitos. Madrid-Paris, 1898; footnote N° 3; Edwards, B. The History, Civil and Commercial, of the British West Indies, 5 vols. London, 1819. Heath, G. R., quoted by Conzemius (footnote 1), loc. cit. p. 17.

[21] De Kalb, Courtenay, Nicaragua: Studies on the Mosquito Shore in 1892. Jour. Amer. Geographical Soc. of New York. 1893, *25*, 236-288. versus opinion expressed by Peralta (footnote 20).

[22] Lehmann, W. Ergebnisse einer Forschungsreise in Mittelamerika und Mexico. Zeitschrift fur Ethnologie, 1910, *42*, 687-749.

[23] Conzemius, E. Notes on the Miskito and Sumu Languages of Eastern Nicaragua and Honduras. Internat. Jour. Amer. Linguistics, 1929, *5*, 57-115.

[24] Heath, G. R. Notes on Miskito Grammar and on Other Indian languages of Eastern Nicaragua. Amer. Anthropologist. 1913, *15*, 48-62.

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In recent times important contributions with regard to the Miskito 114
Indians have been made by H. J. Spinden,[25] A. H. Schultz,[26] D. E. Harrower[27] and the exhaustive investigations of E. Conzemius.[28]

THE TROPICAL SITUATION

The status of peoples living in the tropics and semi-tropical regions 262
varies considerably, depending on environment and man's adaptation to his habitat.[29]. Different foods are produced under different conditions. Thus, in the inner jungles and in certain highlands, very little food may be available; along the rivers it may be plentiful, and along the seashore other food sources may manifest themselves. Climate, geography, and socio-economic factors have a direct bearing on food availability and consumption.[30] Food habits naturally follow a similar 262
pattern: the classical tortilla of Mexico and the Middle American coun- 177
tries; the use of manioc in the Amazon area; the dehydrated potato (chuño) of the Andean altiplano, the all too starchy diet which has developed in the Caribbean areas, all have their explanation in the factors typical of each area. Furthermore, when natives come into contact with other cultures, deculturation processes in the dietary pattern often take place.[31] These deculturation processes are not limited to clashes between Indian and white cultures, such as prevail in most of Latin America, but to the adaptation and absorption of dissimilar cultures not of Indian origin, such as in Puerto Rico and the southwestern States of this country, where the Hispanic and the Anglo-Saxon mode of life meet. Procurement of food in industrial areas by low income groups may modify the diet considerably. With this in mind no gene-

[25] Spinden, H. J. The Chorotegan Culture area. XXI° Congrès International des Americanistes (529-545) Goteborg, 1925.

[26] Schultz, A. H. Anthropological Studies on Nicaraguan Indians. Amer. Jour. Physical Anthropology, 1926, *9*, 65-80.

[27] Harrower, D. E. Rama, Mosquito and Sumu, of Nicaragua. Museum of American Indian, Heye Foundation. 1925, *2*, 44-48.

[28] Conzemius, E. (see footnotes Nos. 1 and 23), also: Die Rama Indianer von Nicaragua. Zeitschrift fur Ethnologie, 1921, *59*, 291-362 (Berlin); Apuntes sobre algunos Nombres Geográficos Mosquitos en Costa Rica y Panamá. Revista de Costa Rica, 1922, 300-306; Les îles Corn de Nicaragua. *La Geographie*, 1929, *52*, 346-362 (Paris).

[29] Pijoán, M. Certain Factors involved in the Struggle Against Malnutrition and disease. Univ. of New Mexico Press, 1943. Inter-Americana Monographs.

[30] Eggan, F., and Pijoán, M. Some Problems in the Study of Food and Nutrition. América Indígena. 1943, *3*, 9-25.

[31] Pijoán, M., and Elkin, C. A. Secondary Anemia due to Prolonged and Exclusive Milk Feeding Among Shoshone Indian Infants. Jour. Nutrition, 1944, *27*, 67-75.

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ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the western region of the Mosquito coast was occupied by the Matagalpa Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

The Miskito and small isolated bands of Suma Indians inhabit the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive additional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

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The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two set seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

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were dying out rapidly, which may account for the lower figure now given. The Rama tribe, of about 200 members, living along the lagoons near Bluefields, has become a sort of slum population; its existence on the edge of the rough seaport village subjects it to the whims and volition of all and sundry. From the Río Tinto northward live the Black Caribs, descendants of the aborigines of St. Vincent Island. In and about Bluefields, Pearl Lagoon, San Juan del Norte, and on the islands, the inhabitants are largely mulattoes; Negroes as well as mulattoes are also found in the coastal towns.

MORPHOLOGICAL CHARACTERISTICS OF MISKITO AND SUMU

The Miskito Indian is generally well built, of middle height whereas the Sumu Indian is rather thickset and of lower stature. Both are proportionally broad shouldered, have beep chests and are heavy muscled. Schultz[20] found the average measure of the adult Sumu and Rama to be 1.5816 m. It is also obvious to any observer that the arm and chest muscles are developed somewhat out of proportion to the leg muscles. This may be due to the fact that these people are essentially canoe (pipante) folk whose chief method of travel consists of river boating. In fact, most of their enterprise is carried out by the use of a boat and the use of arm and torso muscles any exceed those of the lower extremities.

In our studies at Waspam and Saulpuca the weights and heights were noted in a series of individuals with reference to their age. It is apparent that diet plays a role in development[22] but since it will be shown later that the nutrition of these people is adequate in the light of present day criteria, the figures reveal presumably the inherent constitutional morphology of surface area. And since the changes in height and weight vary with the age of the individual it is important to take this factor into account.

It is to be noted that the figures are averages and do not reveal variation. Since the major part of growth occurs between birth and twenty years of age[23] the values given represent the peak of surface area development and the initial phases of further weight gain. However, measurements are no better than their definition and the indivi-

[22] Palmer, C. E. Growth and the economic depression. Pub. Health Reports. 1934, 48, 1277-1292.

[23] Krogman, W. M. The Growth of Man. Tabulae Biologicae. 1941-42, 20, 1-967. Junk, Den Haag, Nederlands (delayed in press because of war).

[24] Krogman, W. M. Human Growth. Ciba Symposia, 1943, 5, 1458-1485.

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dual doing the measuring and much over-emphasis has been placed on this subject.[24] Thus the data are used only as an approximate impression and categorically support clinical observation and conclusions. [41]

Average weight and height of Miskito men and women relative to their age

All years	Sex	152	158	160	165	170	175
			Height (cms)				
			Weight (kilo)				
18-20	M	55.1 (10)*	58 (8)	61 (13)	—	—	64.2 (6)
20-21	M	58.6 (5)	60 (14)	62 (21)	64.6 (6)	65 (6)	64.0 (4)
21-24	M	59.2 (5)	—	61.8 (4)	64.6 (9)	64 (6)	65.0 (4)
25-32	M	66.0 (9)	67 (13)	71.0 (19)	75 (19)	77 (13)	76.0 (2)
18-20	F	60.2 (13)	63 (14)	65.0 (17)	65 (3)	—	—
20-21	F	62.4 (11)	65 (20)	65 (19)	68 (7)	—	—
25-32	F	70.0 (20)	72 (19)	73 (13)	75 (8)	—	—

* Numbers in brackets indicate number of people examined of the same age.

The averages may be further computed for the age groups in question and at 19 years of age may allow for the following comparison:

Comparison of nineteen-year-old subjects
(Height in cms)

Sex	*Present Survey* Miskito Indians	*Taken from Krogman*[24] American Chicago	American Negro	German	Japanese
M	162	176	172	174	158
F	169	164	160	165	146

It can be seen from these data the women grow to be about as tall as the men but from the previous table they also tend to become more obese or add more weight than the men. They appear to be generally of shorter stature than those of us who visited the area and this notion is supported by measurements. It must be noted, however, that these people (Waspam, Sandpaper) were upper river folk and cannot be correctly compared with the data obtained by Schultz[25] who studied twelve Sumu Indians from Río Prinzapolca and twenty five Rama Indians from Rama Key. There appears to be, furthermore, slight differences in weight and height within the tribe. These variations are more pronounced in coastal towns, where the socio-economic level is poor by comparison [51]

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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[33] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[34]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[33] Roberts, L. J.; Blair, R.; Lemming, B., and Scott, M. Effect of a milk supplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300), II. Ossification of the bones of the wrist (pp. 494-509), III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, 56.

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from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)* The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tisnat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melanoccoca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

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304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 There is no trace of any division in clans or exogamic kinship
624 groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would chose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kwatmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government educa-
[87] tion is at minimum, the various religious missions have generally per-
[564] formed this service to the better satisfaction of the Indians. The Indians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

674 Within the villages themselves government takes place with the
626 elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tuwan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

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361 streams. The villages and their populations were studied from Bilwas Karma to San Carlos. (See map.) The villages themselves are perched up high on the banks so that floods will not carry them away.

342 Once a house site has been determined the Indians clear the bush and all large trees, that may endanger the house in case of storms, are felled. The house is usually of rectangular design. Four posts or more are used to hold up a sharp sloping thatched palm leaf roof *(bahna)*. In many houses these roofs extend to about five feet off the ground. The posts are usually of ironwood. Several varieties are used for thatching. [824] such as the *cohune (Attalea cohune)*, *skomphora*, *cola de gallo* or *suita (Calyptrogyne sarapiquensis)* and *caña danta (Geonoma* sp.). These palm leaves may last from for to five years as a roof. Although many Indians use nails today, lianas are still used to bind these structures together. The sides of the houses may be made of split bamboo or boards. Most houses have a sort of loft *(tint)* immediately beneath the roof. It is formed by laying split bamboo or boards across the beams and is reached with the use of a ladder. Various forms of bamboo wattlework may make up the interior walls. Most of the dwellings seen have the floor elevated from the ground at a distance of three to four feet. Thus the houses appear to be set on a series of stilts.

Formerly long communal houses or multiple family houses were used by tribes. Today this practice is abandoned and the family type house is what is found. It must be noted, however, that although many houses are raised from the ground, one occasionally encounters a more primitive dwelling where the family live directly on the ground clay with just a low overhanging roof for protection. But this process can only serve as a temporary shelter since the torrential rains would quickly wash away the household effects.

352 Iron stoves for cooking are common in most houses and in some cases [343] the stove is in a separate house (cookhouse). Many old crates, wooden 354 boxes, and bamboo devices are used for tables and chairs. Beds are made of split bamboo and are raised on posts two to three feet from the floor. Recently hammocks have become popular in the area. They may be purchased from the traders or hand made with cotton, tree bark or Bromelia fibers. Small hammocks are used for children.

[373] Pine wood torches are used for illumination at night and in some cases fiber clusters are impregnated with oils or waxes and lit up. Under the roof the fishing, hunting and agricultural implements are kept.

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TOOLS

Before the conquest the Miskito had very few tools and as has been pointed out by Conzemius[1] these Indians were living in a wood age rather than a stone age. Today the common tools in use are noted in the order of their importance. The machete *(ispara)*, a heavy knife varying from one to two feet in length is the most commonly used tool. It can be used for almost any purpose from clearing bush to ligging postholes. It can also be used as a weapon of defense as well as for cutting and slicing food. Second to the machete is the ax *(asa)* which is used for chopping trees and preparing timber. These axes are made of metal and stone *(alwani mahbra)*. Adzes *(ats)* are today in common use for the making of boats and other objects of wood. With the exception of the stone ax both the machete and the adze are of post Colombian origin.[1] Hoes have been introduced in the last century and these are used primarily for clearing weeds. A variety of knives *(skiro, kisuro)* are seen in all households and used not only to cut with for eating purposes as well.

DIVISION OF WORK

The husband prepares the patch of forest for the plantation. He cuts down the trees and clears the ground by fire. However, the major part of planting, weeding, and taking in the crop is left to the wife. The manufacture of hunting and fishing implements is the man's job. Fishing, however, is carried out by both men and women. The building of canoes is the man's work although women sometimes assist him in this arduous work. Men will cut trees for firewood but the women have to fetch the lengths of timber cut by the men.

It is customary for women to carry heavy loads but the men occasionally do. Heavy loads are placed on the back by the use of a carrying strap *(bombador)*. Many of the women carry loads on their heads.

All the domestic industries such as weaving, spinning, cooking, etc., are female occupations. Tailoring, however, is shared by both the men and the women. The barbecuing of the chase is the only cooking men indulge in.

FUNCTIONAL ENTERPRISE

Interchange of commodities is commonly effected by barter but today there is an ever increasing use of currency (córdoba). Trading is carried out with traders and the Indians in many instances exchange

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cattle and other goods for objects of cheap manufacture. Yet these objects may be of real intrinsic value to the Indians and under such circumstances it is difficult to judge with fairness. However, in the larger settlements Indians have learned the true cost of materials and considerable agitation occurs in trading. Payment for services performed in isolated communities can be accomplished by the use of such commodities as salt and tobacco. In fact, many will prefer these to actual money: in the more remote areas money per se is meaningless and payment is performed with gifts.

These days there is an ever increasing want of objects from the outside world. The items most desired are salt, machetes, axes, knives, adzes, hoes, iron cooking pots, stoves, fish hooks, files, shotguns, ammunition, cotton goods, ribbons, blue dungarees, looking glasses, combs and tobacco. Cereal grains and flour are also desired.

The enterprise of the Indian today is centered mainly around the creation of useful objects. Such objects, therefore, are often used for exchange purposes. Stone work is limited to the manufacture of crude metates or maize grinders (walpa-akbaya) which are used for grinding maize. In the northern part of the Miskito coast a coarse brownish cloth is pounded from the inner bark of a tree closely resembling the rubber trees (*Castilla* sp.). The cloth as well as the tree is referred to as *tunu* or *tikam*. The bark cloth is made into sheets or blankets for bed use or into loin cloths (*palpura*). This cloth is of high value. Pottery once a valuable commodity to these Indians is not alonger made.

Today the main enterprise for the Miskito Indians for barter, exchange or payment are as follows: rubber collecting, banana agriculture, boat making, mine working, cattle and pig raising, general work on rivers, fur from wild animals, and general labor. However, it is to be noted that the Indian could and does in most instances subsist on his immediate environment.

VEGETABLE FOODS

Agriculture is not highly developed on the Mosquito coast, because the many plant-destroying insects limit the process of cultivable products, and the bush springs up early after the ground has been cleared. Thus after two or three crops have been obtained from a plantation (*kanana*), a variety of weedy looking shrubs and grass, which make cultivation difficult, gets a hold on the land. The Indian then does not consider it worthwhile to undertake the labor needed to keep the ground clear but prefers to set up a new plantation (*insla*) by cutting down a patch of usable forest.

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The most important fruit plant of the Miskito is the banana *(sik-sa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(dusua)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(twas)*, avocados or alligator pears *(sikya)*, soursops *(dwarsop)*, cashews *(kasan)* and plums *(poims)*. The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

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MEAT FOODS

226 . A very large share of food is obtained from the sea, the lagoons, and the rivers. Larger fish are caught by throwing a spear or javelin, smaller ones with hooks or nets. Previous to the introduction of steel, the Indians fashioned their spear heads from bamboo, which was easily cut into barbs. A cord is attached to the point whereas the shaft is a solid light wood. With this device they spear the carp-like snook and the tarpon. At night fish are attracted by the use of a pitch pine torch and are also speared; turtles are harpooned. Fish are sometimes caught by "poisoning" the water. For this purpose the Indians utilize several vines; usually one which has been identified as *Seriania inebrians*. The vine is crushed with flat stones to release the poisonous milky juice. A creek is temporarily dammed and at some distance above the dam the crushed plant is thrown into de water, the fish are quickly paralyzed and are then caught by the Indians. Large fish are easily harpooned when in this condition. Smaller fish are allowed to float away and recover when they reach unpolluted water. Bows and arrows are rarely used today for fishing purposes but near mining centers fish are often dynamited; this process is to be condemned since it destroys the majority of the smaller fish.

[225] The tails of young alligators and crocodiles are occasionally eaten. Lobsters, crabs, and mollusks form an important item of food. In general, the rivers and lagoons afford an ever present, easily obtainable source of food.

224 With muzzle loading and other equally out-of-date shotguns, the Indians hunt game. Spears, bows, and arrows are occasionally used but the blowgun is no longer used. Game is found in abundance along the margins of the rivers. Deer, Peccary, spider monkey and capuchin monkey, tapir, lizards and a variety of birds, including parrots, red-spoonbills, curasows, mountain hens, quail, partridge, pigeons and a number of wild ducks, are used for food. In addition to the wild game, the Indians raise and eat some domestic cattle, pigs and chikens. There is no lack of meat of one form of another. It is often preserved by drying and smoking it for several days over a dull fire, since the humidity is too high for sun drying. Salt is used sparingly by the Indians.

FOOD PREPARATION AND CONSUMPTION

373 . Fire is a necessity for cooking, for without it the Indians would have to subsist on raw foods. Fire is produced by twirling a hardwood stick in a notch of wild cane. When smoke appears a piece of wild

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cotton fluff is placed in the notch and the twirling continued. Several 373
fragments of the cotton begin to glow and these are fanned into flame. Today, many Indians use matches but the primitive method of making fire is still used to a great extent. Many of these fires may have been started a generation or more ago. They are tended or kept burning in iron or stone cooking ovens within the houses.

Many of the Miskito use bamboo tongs or tweezers to pull roasted 415
plantains, cassava, and other foods out of the hot ashes. The Miskitos use large wooden mortars *(uno, no)* and hard wooden pestles *(una, mihta)* to pound grains and fruits. The pestle is single headed and tapers toward the handle end. The Sumu Indians on the other hand use a metate and mealing stone for grinding maize and cacao. Light iron tripod post *(dikwa)* are found in every household, and have replaced earthen vessels for cooking purposes. Large calabashes with a small hole in the apex, just large enough to insert a finger, are the common water canteens *(kahmuntara)*. Segments of a large species of bamboo are also used to haul water in certain areas. They are made from a section of the bamboo stem cut so that a nodal septum serves as a bottom. The stem may be cut off immediately below the next septum or it may be cut outside of each septum to convert it into a small barrel. A hole is then drilled for filling and a plug inserted.

Fermented beverages are stored in large earthen vessels *(sumi)*. Plates, cups and glasses are made from the calabash *(kalmi)* fruit, which is cut and the soft watery pulp and seeds removed. Square, round, or oval shaped bowls are sometimes made of mahogany and other woods, but calabash bowls seem to be preferred. A variety of wooden spoons, pat sticks, and stirring sticks are also used. A primitive sugar mill *(tranko)* is employed to squeeze the juice from sugar cane.

It has been observed that the Miskito Indian has an enormous ap- 264
petite. At some meals he may take as many as a dozen helpings. On the other hand he may go days with hardly any food at all, specially during inclement weather, or during a hunt or a long travel. Generally, the women do the cooking, the men only on trips away from home. No regularity is observed in eating, most of the Indians eating whenever they are hungry or after hunting. They usually have one meal in the early morning and one at night before retiring. There is no midday meal. When a meal is ready the grownup men are served first with the best and largest shares. A calabash of soup or stew is usually served first. Salt if available is eaten separately. The women and children eat together. Indians rarely speak during a meal, and a visitor is never questioned while he too should remain in silence, since to do otherwise would be a breach of etiquette.

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252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink prepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January	*Aladi cati. Inupu cati:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

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February	*Cauwa cati, isla cati:* tortoise time, iswilly lizard time. Few citrus fruits, coconuts or vegetables.
March	*Cacamuk cati:* iguana season. Few green vegetables or fruits.
April	*Willi wauica cati:* male turtle time. Coconuts, very few vegetables, few bananas.
May	*Willi Mayrhen cati:* female turtle time. More bananas, plantains and coconuts.
June	*Li cati:* rain month. Same as May.
July	*Pastara cati:* high wind time. Same as May, a few more greens, bananas.
August	*Sicla cati; wis cati:* ? Few citrus fruits, more greens, bananas.
September	*Wis cati:* wis month.
October	*Sauhs cati, prarhi cati:* south wind month, hurricane time. Food consumption depends to a great extent on the weather. Wild fruits, citrus fruits.
November	*Yahibra cati:* north wind time. Citrus fruits, wild fruits.
December	*Krismas cati:* Christmas month. Fewer vegetables and fruits consumed.

During May, June and July no greens of any kind are available; this is true also during late December and January. Meat consumption remains fairly constant.

Average meat intake per day (June)	960 grams.
Other fruits and foods (June)	400 grams.

The above was the approximate daily consumption of my head boatman, Ramón. Others ate a little more or a little less, but the proportion was about the same. Apparently, members of most families consume about the equal amounts of meats and vegetables as he did. On the other hand, following a hunt, the meat consumption increases significantly and sometimes an entire animal is eaten at one sitting. Be it noted that meat is usually secured from hunting or fishing. This 262
is somewhat striking when one observes the large numbers of turkeys 231
among the families. It is assumed that as such these birds would be eaten frequently but instead they are consumed rarely; they are household pets. To some extent this is true of chickens. Pigs, on the other hand, are more frequently eaten; they require little care and in general forage for themselves. Cowmeat, steermeat, heifer meat, etc., is obtained from the occasional slaughter of domestic cattle. The latter are plentiful.

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262 The Indians also secure honey from wild honey bees. In the Coco
[223] territory there are various species of stingless bees *(Meliponidae)*. The honey cells are circular and the honey is yellow and slightly acid in taste, it does not crystallize when kept for sometime. Previous to the introduction of sugar cane the honey was used to sweeten food.

The most important food of the Miskito Indian is the banana, even though it is not indigenous to America. As such this is one of the few examples where a food originally foreign to a people was immediately accepted an chronically utilized. On the other hand the use of cereals so common throughout the Americas, is infrequent. The reason for this is that cereals are difficult to grow in this territory. The numerous insects which attack certain types of vegetable or plant life restricts agricultural enterprise. Furthermore there appears to be no need of cereals in the diet. Beans have recently been introduced and in some communities they have been raised for eating purposes.

Oils are easily prepared from coconuts or varieties of nuts. These are crushed and placed in boiling water, and in due course the oil rises to the surface and is skimmed off.

262 It can be said that the Miskito Indians living as they are, unmo-
177 lested, by the banks of rivers and streams secure enough wild fruits, vegetables, fish and game to adequately supply the yearly food. To this is added small agricultural projects of their own, such as banana plantations, citrus fruits, etc. When these Indians become sequestered in larger villages or are removed from their community to work for mines, rubber collection, or as laborers for fruit companies, the dietary deteriorates. To secure food under these new circumstances they need money, a substance which is easily expendable and does not represent a material which may be needed in the future. The Rubber Development Corporation has had in many instances fed laborers on foreign foods which have not always agreed with or been agreeable to workers.

NUTRITIONAL EVALUATION OF THE DIET

121 The evaluation of the nutritional status of individuals from any single examination of their diet is difficult if not impossible. There are widely divergent views regarding the needs of the body, as to the extent and character of the food requirements, of the relative merits of various foods and as to the degree and frequency of intake of the nutritional components. A survey of dietary intakes will often make one suspect a deficiency and may warn the investigator what to seek for In the end clinical appraisal is the only satisfactory method. There is

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today suficient evidence[36] to show that potential deficiency disease, latent deficiency disease and subclinical deficiency disease are unwarranted definitionally and that only the frank clinical manifestations are satisfactory for a diagnosis. Furthermore, the certain milder symptoms often ascribed to deficiency of a nutrient are more often related to another cause.[37] Thus, gingivitis has resulted, experimentally, from a deficiency of vitamin A,[38] of vitamin D,[39] of vitamin M,[40] of nicotinic acid[41] as well as ascorbic acid. Furthermore, most cases of gingivitis are unrelated to vitamin deficiency,[42], [43], [44] and in most instances does not respond to vitamin C therapy. Glossitis, furthermore, may be due to numerous causes other than nicotinic acid deficiency; cases with Bitot's spots are in most instances resistant to vitamin A therapy[45] and many exhibit vitamin A plasma levels usually encountered in healthy individuals.[46] Berliner[47] has questioned the diagnosis of xerosis conjunctivae as depicted by Kruse;[48] keratitis and corneal invasion found in rats on riboflavin free diets[49] does not occur in monkeys and in humans the lesions seen are more often due to other causes.[50] It must

[36] Dann, W. J., and Darby, W. J. The appraisal of nutriotional status (nutriture) in humans. Physiological Reviews, 1945, *25*, 326-346.

[37] Jeghers, H. Medical progress; nutrition; appearance of tongue as index of nutritional deficiency. New Eng. Jour. Medicine. 1942, *227*, 221-228.

[38] Wiehl, D. G., and Kruse, H. D. Milbank Mem. Fund. Quart. 1941, *19*, 241.

[39] Toppings, N. H., and Fraser, H. F. U. S. Public Health reports, 1939, *54*, 416.

[40] Langston, W. C., Darby, W. J., Shukers, C. F., and Day, P. L. Nutritional cytopenia (Vitamin M deficiency) in monkey. Jour. Expl. Med. 1938, *68*. 923-940.

[41] Smith, D. T., Persons, E. L., and Harvey, H. I. On the identity of the Goldsberger and Underhill types of canine blacktongue. Jour. Nutrition, 1937, *14*, 373.

[42] Restarski, J. S., and Pijoán, M. Gingivitis and vitamin C. Journal. Amer. Dent. Assoc., 1944, *31*, 1323-1327.

[43] Hess, A. H. Scurvy, past and present. Philadelphia, 1920.

[44] Stamm, W. P., Macrae, T. F., and Yudkin. S. Incidence of bleeding gums among RAF personnel and value of ascorbic acid in treatment. Brit. Med. Jour. 1944, *2*, 239.

[45] Metivier, V. M., Bitôt's spots in Trinidad. Amer. Jour. Ophth. 1941, *24*, 1029-1034.

[46] Darby, W. J. (unpublished observations, 1945).

[47] Berliner, M. L. Regarding early detection of avitaminosis A by gross or biomicroscopic examination of conjunctiva. Amer. Jour. Ophthal. 1942, *24*, 302-308.

[48] Kruse, H. D. Ocular manifestations of avitaminosis A. Dis. Eye, Ear, Nose and Throat. 1941. *1*, 272-287.

[49] Bessey, A. O., and Wolbach, S. B. Riboflavin deficiency in the rat. Jour. Expl. Med. 1939. *69*, 1

[50] Darby, W. J., and Milam, D. F. (1945, in press).

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121 be concluded that there exists no specific tissue alteration which alone may be considered pathognomonic of a single deficiency state: the deficiency must be characterized by all of the clinical signs and symptoms proven to result from a nutritional defect.

116 In regard to the Miskito Indians no cases of vitamin deficiency were observed, either by the use of the unproven criteria advocated by Kruse[51] or by the strict clinical evaluation of the subject. Marasmus and malnutrition were observed in infants suffering from diarrhoea, dysentery, or who were abandoned and deprived of food. But other than this finding, little can be said in favor of malnutrition. This becomes obvious in view of the foods these people consume: fruits in season and meats would militate against malnutrition. The people are generally robust and well built regardless of their food habits and while they eat only when hungry, without regularity, it must be admitted that such a method cannot be nutritionally unsound. At Waspook where large quantities of meat and vegetables are consumed the year round, eye lesions often ascribed to ariboflavinosis were commn but the local trader would generally assure a cure by selling dark glasses. The eye conditions were most bothersome during the dry seasons and less so during the rainy season.

The brief study of the dietary habits show that the protein intake from animal food is high, that from legumes relatively low. It has been estimated that the Miskito Indian consumes from 150 to 300 gms. daily of protein, 150 gms. of fat and 200 gms. of carbohydrate; these figures vary somewhat but in general the relationship is about the same. Thus the caloric intake is from 2000-3000 calories daily. These are, of course, average figures determined over a period of time, since the Indian often goes withouh a significant food intake for periods of several days to a week. Except for the fact that the diet of the children may be somewhat low in calcium, there appears to be no dietary deficiencies among these people.

Some of the commonly consumed foods were analyzed and the results are as follows:

[51] Kruse, H. D. Handbook of Nutrition; medical evaluation of nutrional status. Jour. Amer. Med. Assoc. 1943, 20, 584.

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CERTAIN SPECIFIC NUTRITIONAL FACTORS IN COMMON FOODS 146
(Per 100 Grams portion)

	Salt Na Cl. gms.	*Calcium* gms.	*Iron* gms.	*Thiamine* mg.	*Niacin* mg.	*Ascorbic Acid* mg.
Fish:						
Snook	.301	.016	.0016	.06	3.16	
Bass	.202	.028	.0020	.07	2.10	
Monkey	.112	.010	.0028	.092	4.98	
Parrot	.114	.014	.0020	.09	4.36	
Beef	.120	.017	.0032	.082	5.83	
Coconuts	.192	.020	.0014	.02	.42	
Bananas	.131	.006	Trace	.04	.30	7.0
Avocado	.018	.016	.0010	.05	.80	18.0
Oranges	.009	.024	Trace	.06	.16	52.0
Lemons	.005	.023	Trace	.01	.08	72.0
Grapefruits	?	.020	Trace	.03	.10	64.0
Cheese (semicottage)	?	.164	.002	.04	.08	

The intakes of salt average between 1-2 gms. daily; iron between 7-14 mg.; calcium from 0.4-0.9 gms.; thiamin from 0.5-1.0 mg., and niacin from 10-20 mg. During January, February, March and April, the ascorbic acid consumption is low, approximately 10-15 mg. a day. From May to July there is a slight increase of about 5 mg. more in the dietary, while from August to December the intakes will be from 150-300 mg. daily due to the high consumption of citrus fruits, the high intake during this period affords sufficient protection of health during the subsequent period under a maintenance regime.

Clinical findings as regards nutrition. Anemia is the most prevalent finding among children of the Coco River Basin, and what is amazing is the way children tolerate rather drastic reductions in hemoglobin content. Admittedly, altitude is no problem in this region so that at least there is no demand for an increased oxygen capacity of the blood. On the other hand it is impossible to differentiate, clinically, between children having a blood hemoglobin content of 8.0 gms., and those with 13.0 gms. per 100 gms. of whole blood. Furthermore, if the anemia is improved by the use of iron salts the parents may or may not note a difference in the child's behaviour, clinically the difference cannot be detected except in rare instances. In the more severe anemias children complain of lassitude, fatigue, restlessness and lack of energy.

The primary cause of anemia is the type of diet used in early infancy. The child is placed at the breast as soon after birth as possible and is fed whenever it cries. Irregularity in feeding seems to be of no bother to the parents. However, during teething the mother automatically reduces the number of times a day a child is placed at breast since teeth

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146 853 irritate the nipple and causes discomfort to the mother. It is at this point that considerable supplementary feeding is introduced. It is of interest to note that the teeth begin to make their appearance at about the fourth to fifth month in contrast to the average of six to seven months in the United States. The fact that iron reserves are exhausted at about the third month and that supplemental feeding occurs shortly thereafter is a curious coincidence favoring the child.

[827] The Indians believe that food consumed by the mother produces milk and for this reason the mothers eat often and large quantities of food. The children are fed bananas early in life and even if the iron intake from milk supplemented with bananas amounts to 4 mg. a day, it is insufficient to adequately overcome physiological hemoglobin depletion. Theoretically this would soon be made up by foods rich in iron. This in fact is what is attempted by the natives themselves but the anemia is not generally overcome because just as soon as the children begin crawling outdoors form infestation occurs and a relative anemia may be maintained.

146 For practical field use, hemoglobin determinations were carried out using the Sahli equipment and 100 per cent hemoglobin was computed to indicate 15.6 gm. per cent hemoglobin in blood. For purposes of comparison between hemoglobin levels in Guatemala, Yucatán[82] and the Coco territory of Nicaragua, the averages represented:

Guatemalans (691 cases, Shattuck)	73.3 per cent
Yucatecans (2037 cases, Saunders)	71.9 per cent
(1261 cases, Shattuck)	70.6 per cent
Coco River (100 infants, Pijoán)	55.0 per cent

It is admitted that the method of hemoglobin estimation varied, i, e., Shattuck used the Tellquist method, whereas the Sahli method was used in the Coco study. Regardless of this fact, there was less altitude in the Coco Basin to provoke hemoglobin increases and secondly the incidence of insidious disease seemed greater.

Hemoglobin values in 100 infants (2-3 months old) in Zapuca and Waspam, Coco Basin, Nicaragua.

Number of Infants	*Hemoglobin value*
29	60-70 per cent
48	50-60 per cent
23	40-50 per cent

Another point of difference between this study and the others is that the findings by Shattuck was fairly representative of his territory

[82] Shattuck, G. C. A Medical Survey of Guatemala. Carnegie Institution of Washington. 1938.

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in regards to age groups whereas this one concerned itself with infants 146
where anemia was to be expected. Furthermore Shattuck was able to exclude malaria as a cause of anemia.

Blood smears were examined and the significant findings were a slight achromia and variation in size and shape of the red cells, and microcytosis characteristic of chronic hypochromic microcytic anemia commonly associated with iron deficiency in the body.[51] So far then in infants and early childhood the prevalent deficiency is an iron lack which was found to be so not necessarily on clinical evidence but on laboratory investigation. .

Hypochromic anemia. The relatively low iron content of milk (1.8-2.3 mg. 1 liter Fe) [52] accounts for the presence of anemia in early infancy and subsequently a diet, early in life, not rich in iron may not overcome the depleted iron reserves. To this is added the anemia sus- 146
tained by the effects of infection and intestinal parasitism. Since the 164
more severe anemias occur in those subjects with hookworm disease an iron balance study was undertaken.

Balance study of four subjects with Necator Americanus infestation: Since the demonstration by Stiles,[54] Harris, [55] and others, that hookworm infestation in the United States in associated with anemia, the relationship of cause and effect the syndrome has received attention

Recently Rhoads, Castle, Payne and Lawson[56] have advanced the view that the anemia resulting from hookworm infestation is due to blood loss through the bowel. This is based on the fact that the worms with their hooks cause minute hemorrhages in the bowel wall, but they have stated as have other observers[57], [58] that although there is a slow hemapoietic response to iron therapy during infestation a dramatic response to treatment occurs only when it is administered after the removal of the worms. The assumption that this is a blood loss anemia

[53] Peterson, W. H., and Elvehjen, C. A. The Iron Content of Plant and Animal Foods. Jour. Nutrition, 1931, *4*, 419.

[54] Stiles, C. W. Report upon the prevalence and geographic distribution of hookworm disease. U. S. Govt. Print. Off., U. S. Public Health Service Hyg. Lab. Bull., 1903, *10*.

[55] Harris, H. F. Ankylostomiasis, the most common of the serious diseases of the southern part of the United States. Amer. Med. 1902, *4*, 776.

[56] Rhoads, C. P., Castle, W. B., Payne, J. C., and Lawson, H. A. Observations on the etiology and treatment of anemia associated with hookworm infection in Puerto Rico. Medicine, 1934, *13*, 317.

[57] Rotter, W. Ueber die histologischen Veränderungen des Dunndarms bei Ankylostomiasis. Virchows Arch. of path. Anat. 1931, *280*, 587.

[58] Rhoads, C. P., and Castle, W. B. Observations on the etiology and treatment of the anemia of hookworm disease in Porto Rico. Jour. Clin. Invest. 1932, *11*, 809.

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is based on the blood picture, bone marrow examination and on the fact that the effect of iron therapy was moderate until after the removal of the worms. The fact that live extract exerted no particular effect was interpreted by Rhoads and his associates to support their view.

The assumption that blood loss is the cause hookworm anemia is a good one since it is obvious that the worm draws through its gastro-intestinal tract a fairly copious amount of blood. In fact, much of the blood may pass through the worm in an unused condition. On the other hand it is of interest to note that the degree of anemia and the number of worms present in an individual cannot be correlated.[59], [60] Actually it has been found that a small number of parasites can cause a profound anemia. Whipple,[61] furthermore, has found weak hemolytic factors in hookworms which has suggested the chronic effects of a hemolysin.

The morphological characteristics of the blood cells in hookworm anemia are not those found in hemolytic jaundice. There is besides this consideration the report of De Langen[62] which expresses the view that hookworms secrete a substance toxic to bone marrow. It may be that a variety of factors aside from blood loss exist which are responsible for the anemia. So far no one has attempted to determine iron utilization in subjects with hookworm infestation, a feat which today could be studied to advantage with radio active iron. Our studies, however, were carried out using the classical method of iron balance in which certain errors may occur.

The iron balance was performed in four subjects with hookworm infestation. The procedure used was that described by Farrar[63] and the iron assays of food and feces were performed by the method of Pijoan and Elkin.[51] The only hematological inquiry was the hemoglobin determination in order to ascertain the response to various intakes of iron. The subjects were boys, two of them of 8 years of age, one of 10 years and another of 12 years. As far as could be ascertained all

[59] Smillie, W. G. Studies on Hookworm infection in Brazil. Rockefeller Inst. Monograph, 1922, *17*, 46.

[60] Rosenblum, M. B., and Malkowa, M. N. Zur Charakteristik der Anaemia bei Anchylostoma duodenale. Folia Haematol., 1928, *37*, 197.

[61] Whipple, G. H. The presence of a weak hemoglobin in the hookworm and its relation to the anemia of Uncinariasis. J. Expl. Med., 1909, *11*, 331.

[62] De Langen, C. D. Contributions to the toxic origin of the Anaemia and other symptoms with Ankylostomiasis. Trns. 5th Biennial for East. Assn. Trop. Med. London, 1924.

[63] Farrar, G. E. Jr. The determination of iron in biological material. Jour. Biol. Chem., 1935, *110*, 683.

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of them had untreated hookworm infestation of some duration. There was no method at our disposal to accurately determine the degree of infestation. The diet consisted chiefly of milk, bread, cheese, avocado, banan, vitamins and eventually ferrous sulfate supplements. The results are expressed in the following tables.

SUBJECT I

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	7.31	7.40	— 0.09	7.4 gms.	None
2	7.42	7.40	— 0.02		None
3	7.21	7.40	— 0.19		None
4	7.46	7.50	— 0.04	7.38 gms.	None
5	7.33	7.31	+ 0.02		None
6	7.37	(*)			
7	7.56	7.49	+ 0.04		Trace
8	8.22	8.31	— 0.09		Trace
9	8.41	8.39	+ 0.02		None
10	8.30	8.30	———		
11	8.60	8.75	— 0.15		Trace
12	8.75	8.62	+ 0.13		None
13	8.80	(*)			
14	8.20	8.31	— 0.11	7.38 gms.	None
15	8.36	8.30	+ 0.06		None
16	8.41	8.46	— 0.05	7.36 gms.	

Total Balance in 16 days — 0.51

* Specimens lost.

SUBJECT II

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	11.15	11.15	———		
2	11.20	11.21	— 0.01	6.0 gms.	None
3	10.40	10.38	+ 0.02		Trace
4	10.81	10.58	+ 0.23		None
5	9.68	9.72	— 0.14		None
6	10.41	10.46	— 0.05	5.8 gms.	Trace
7	10.28	10.30	— 0.02		None
8	9.24	9.26	— 0.02		Trace
9	9.82	9.79	+ 0.03		None
10	10.56	10.58	— 0.02		None
11	10.62	10.62	———		Trace

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12	10.84	10.83	+0.01	6.0 gms.	Trace
13	11.36	11.36	——		None
14	11.42	11.43	−0.01		None
15	11.41	11.42	−0.01		None
16	13.64	13.63	+0.01	6.12 gms.	None

Total Output Equals Intake Neg. Balance.

SUBJECT III

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	18.75	18.76	−0.01	5.16 gms.	None
2	22.43	21.06	+0.35		None
3	19.35	19.37	−0.02		Trace
4	20.36	20.36	——		None
5	21.10	21.08	+0.02		None
6	20.34	20.36	−0.02		Trace
7	22.10	22.09	+0.01		None
8	21.15	20.15	——		None
9	18.98	18.96	+0.02		None
10	19.26	19.25	+0.01		None
11	19.34	19.34	——		None
12	19.71	20.74	−0.03	5.80 gms.	Trace
13	19.24	19.23	+0.01		None
14	19.49	19.47	+0.02		None
15	20.10	20.10	——		None
16	20.18	20.17	+0.01	6.0 gms.	None
Total Balance			0.38 mg.		
			0.0237 mg. per day		

SUBJECT IV

Supplemental Iron Given (given 75 mg. $FeSO_4$ = 27.5 mg. Fe)

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	36.41	36.38	0.03	7.12 gms.	No
2	37.42	37.39	0.03		tests
3	36.30	36.28	0.02		done
4	38.40	38.31	0.09	7.40 gms.	because
5	44.76	43.57	1.19		of
6	45.71	44.65	1.06		high
7	44.84	43.78	1.06	8.0 gms.	iron
8	44.73	43.66	1.07		intake

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9	45.12	43.11	2.01	
10	43.19	42.13	1.06	9.0 gms.
11	39.38	39.30	0.08	
12	38.40	38.31	0.09	
13	37.41	37.32	0.09	10.5 gms.
14	36.64	36.59	0.05	
15	38.52	38.45	0.07	11.5 gms.

Total Intake 9.11 mg. or 0.57 mg. Fe daily.

Since the amount of iron in urine is negligible and would indicate if anything in favor of negative balance no urinary excretion iron assays were performed. It is obvious from our study that a positive but slight (0.0237 mg.) balance is shown when the consumption of iron is in the neighborhood of 18 mg. iron intake a day, but it is known that during early life iron requirements are considerable and the drains upon the iron stores will then be the greatest. Exhaustion of iron stores takes place during the first year of life when the total blood volume is tripled and the total hemoglobin doubled.[84] A low iron intake at this time will bring about a depletion of the iron reserve. At the age when Necator infestation manifests itself the hemoglobin stores are often low or exhausted. It has been calculated by Heath and Patek that the average annual requirement of a 10 year hold child is about 0.152 grams or 0.04 mg. per day of absorbed iron (derived from a positive balance). It is obvious therefore that the iron utilization of 0.0237 mg. per day is quite insufficient, especially when the body stores are depleted. Thus, in Necator infestation more iron is required, and the administration of supplemental iron (75 mg. $FeSO_4 = 27.5$ Mg. Fe) brings about a positive balance where 0.57 mg. Fe are apparently absorbed daily. From subfindings it seems clear that the anemia of hookworm requires treatment with large doses of iron and it has been the clinical experience of others[85] that improvement takes place only with large doses of iron ammonium citrate and ferrous sulfate. On the other hand the hemoglobin increases 1/2 per cent per day if the worms are first removed.[86] These data presented here lead us to conclude that the explanation of anemia based entirely on blood loss from the bowel is an unsatisfactory one. Even though it may contribute to the anemia of Necator infestation, some other mechanism must play a role in sustaining the anemia. Whether the worms secrete a toxin which affects the hemopoietic system or a substance which forms unassimilable iron salts is a matter of conjecture and requires further inquiry. It has been noted that about fifty per cent of subjects with hookworm infes-

[84] Heath, C. W., and Patek, A. J., Jr. Anemia of iron deficiency. Medicine, 1937, *16*, 267.

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146 tation have chronic diarrhoea, some have glossitis,[65] occasionally leu-
164 copenia and lymphocytosis is observed. Reticulocyte counts usually were under 3 per cent and studies on platelets show them to be within normal limits. These findings indicate some unusual process in Necator hypochromic anemia.

Our own assays of the worms themselves reveal an iron content of only 1-2 mg. Fe per kilogram. It seems unlikely therefore that iron consumption by the worm plays a rôle in the anemia.

WORM INFESTATIONS

164 Because the writer is not a helminthologist the classification of
114 intestinal parasites is not a complete one and depended considerably on the aid given him by laboratory assistants. However, certain aspects of the subject are intriguing. Sandground[66] has pointed out that the data dealing with intestinal parasites can be collated in such a way as to throw light on the racial origins of some of the Indians and to bear witness to the invasion of Central American countries by alien races. Von Thering according to Sandground had demonstrated the value of testimony from the world of parasitism as an aid to zoogeography and paleozoology. For instance, in recognizing the close affinities between the tapeworms harbored by marsupials in South America and Australia, Zschokke[67] presented evidence of a phylogenetic relationship in their hosts. Metcalf[68] also demonstrated by studies on opalinid ciliates in Amphibia a genetic relationship between frogs of South America and Australia and brought out new facts which tended to corroborate hypotheses in geography dealing with land masses connecting now isolated continents. Using information on the history of certain infectious diseases, and their prevalence in certain races, Williams[69] used the host-parasite association as a means of studying racial relationships among American Indians.

[65] Ashford, B. K., King, W. W., and Gutiérrez, P. Report of the study and treatment of "anemia" in Porto Rico. Bur. Print. and Supplies, San Juan, 1904.

[66] Sandground, J. H. Consideration of relation of host specificity of helminths and other metazoan parasites to phenomena of age resistance and acquired immunity. Parasitology, 1929, *21*, 227-255.

[67] Zschokke, F. Die Darmcestoden der Amerikanischen Beutelniere. Centralbl. f. Bakteriol. 1904, *36*, 51-62.

[68] Metcalf, M. M. Bull. 120, U. S. Nat. Mus. 1923: Smithsonian Misc. Coll. 1929, *81*, No. 18.

[69] Williams, H. U. The epidemic of the Indian of New England, with remarks on Native American Infections. Johns Hopkins Hosp. Bull. 1909, *20*, 340-349; 1616-1620.

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The solution of ethnological problems by the helminthological approach is not without its difficulties and as such is beyond the scope of this report. On the basis of Sandground's data the prevailing hookworm infection among pure blooded Indians should be *Ancylostoma duodenale* but where Negroes have settled and intermingled the infestation becomes dominantly *Necator americanus*. In the Coco Basin, where hookworms were introduced primarily by negroes, the infestation, as far as our observations permitted, was that of *N. americanus*.

It is of interest to note that onchocerciasis was not found in the Coco Basin even though the writer thought he had found two patients with this disease. The biopsy material was poorly prepared and there was some question as to the identity of the filarial worms. That the diagnosis was probably erroneous was further strengthened by the fact that *Simulium* flies transmitting this disease were not seen. However, the limited observations in searching for the fly were by no means thorough and do not exclude the possibility of their existence or that of the disease. It may be that in years to come when commerce between natives is increased the appearance of onchocerciasis may become an obvious clinical finding.

Cases of Schistosomiasis have been reported from Panama, Costa Rica and Yucatán but none have been reported from Guatemala[70] nor were we able to find any in Central Nicaragua. Even though *S. mansoni* and *S. hematobium* are of Ethiopian origin, the appearance of negroes in the Coco Basin did not introduce the disease and this fact is ascribed to the absence of the species of snails suitable for the larval development of the parasite.

The commonest worm infestations in the Indians of the Coco Basin were *Ascaris lumbricoides* and *Trichuris trichiura*. The former was common in communities which do not possess sanitary facilities and is contracted by ingesting eggs that are expelled in the feces. The latter, "whip worms", whose eggs are able to withstand adverse environmental conditions, almost to the same extent as those of Ascaris, was commoner than the former and the "pinworm" *Enterobius vermicularis* was frequently found. *T. saginata* and *T. solium* have been noted by others in the area studied but were not observed by us.

[70] Sandground, J. H. Helminthic infections in Guatemala in a Medical Survey of Guatemala. Carnegie Institution of Washington, 1938.

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Mixed Worm Infestation in 100 Children From Zapuca and Waspam (Coco Basin)
Nemathelminthes

Age of Child	*Number of Children Infected*			
	Ascaris Lumbricoides	*Enterobius Vermicularis*	*Trichuris Trichiura*	*Necator Americanus*
5—10	56	31	60	10
10—15	21	16	56	13

Trichuris trichiura infestation was common throughout the population. However, as the children become older, and among adults, there was a decreasing incidence of infestations, other than Trichuris, proportionate to the age of the individual. It is presumed that as age increases the subjects are more careful about their habits and the ordinary methods of re-infection are reduced.

757 164 In treating intestinal parasites, the Indians use numerous decoctions made from tree barks. As far as can be ascertained the brews act mainly as cathartics and are not, strictly speaking, vermicidal. The effect of violent catharsis is two-fold. First, there is the psychological effect of direct action of the therapeutic of reducing a swollen abdomen and the consequent relief from distension or constipation, and second, there is a diminution in the quantity of parasites, since many were removed by cathartic action. The Indians, however, prefer our methods for treating intestinal helminths and seek such treatment whenever available.

THE INFECTIOUS DISEASES OF THE COCO BASIN

Yellow Fever

164 Carter's investigations[71] have revealed that yellow fever was a disease brought to the New World from Africa. The first epidemic occurred in Yucatán in 1648. Since then numerous epidemics of yellow fever have been described; the distribution of the disease and dates of occurrence have been listed by Hirsch.[72]

As far as could be determined yellow fever has not been reported from the eastern coast and the interior of Nicaragua. Dr. Thaeler, at Bilwas Karma, has never seen a case in this area and other investigators have suspected it in this region but were unable to discover its presence.

[71] Carter, H. R. Yelloyw fever: an epidemiological and historical study of its place of origin, 1931. Baltimore.

[72] Hirsch, August. Handbook of geographical and historical pathology. 1883. Vols. I and II, News Sydenham Society, London.

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The mosquito, *Aedes aegypti*, the transmitter of the disease, is common in the territory but is apparently uninfected. Even in the listing of Hirsch there is no report of yellow fever in Nicaragua until 1868 and it is possible for geographical reasons that the disease failed to appear in the Coco Basin. According to Raynal[73] several outbreaks of yellow fever occured in nearby Guatemala (San José, 1859; Escuintla, 1868; Retalhuleu, 1881 and 1895), and this would confirm Hirsch's notation of yellow fever in Nicaragua in 1868.

It must be recalled that a high mortality occurs from yellow fever only when the disease appears in a relatively non-immune population or when the disease has been carried to immune territories. It is possible therefore that the disease, if present at one time, could be quiescent in certain areas for a period of years and since small numbers of travellers visit central and eastern Nicaragua, very few, if any, infective people enter the territory. With this in mind it would appear plausible to suppose that the vector insect has not had opportunity for obtaining the virus.

Plague

Although common in Europe during the 16th and 17th centuries, plague did not reach the New World until late in the 19th century, when it appeared for the first time in San Francisco, México, and other scattered territories. Plague is unknown in the Coco Basin and as a result presents no public health problem.

Cholera

The first pandemic of cholera probably started in Indian between 1817 and 1823 but did not reach the New World until between 1826 and 1837.[73] In 1837, according to Bancroft[74] the epidemics of cholera began to make their appearance through Guatemala and in other parts of Central America; in Nicaragua in 1855 it became a serious problem. In 1856 it crippled Mora's army in Nicaragua and continued its course. Walker's army was devastated by it.[74] The disease spread quickly throughout Central America and continued in El Salvador and Guatemala until near the end of 1857. It broke out again in Nicaragua in 1866 and continued in Honduras until 1871. In spite of the poor sanitary conditions today the presence of the disease has apparently

[73] Raynal, J. Annales de médicine et de pharmacie coloniales. 1932, *30*, 59, Paris.

[74] Bancroft, H. H. History of Central America, 1883, 1887, vols. 7 and 8. San Francisco.

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not seriously manifested itself. It apparently has not made its appearance in the Coco Basin and no knowledge of it can be found for the territory.

Smallpox

The exact date of the introduction of smallpox into the New World is not well known. In Mexico, Bernal Díaz[75] states "a negro was in the smallpox: an unfortunate importation for that country for the disease spread with considerable rapidity, and the Indians died by the thousands"; this was in 1520. Since then there have been numerous ravages of the smallpox in various portions of Central America, however, there is no apparent history of the disease in the Coco Basin and if it did exist it would have been localized to a great extent to the smaller communities. The great outbreaks of smallpox in Costa Rica in 1862, in Guatemala and Honduras in 1883, was escaped by Nicaragua due to vaccination. Most of the visitors to the Coco Basin had already been vaccinated and this fact alone presumably supports the view that the disease is relatively rare in that territory.

Measles

The exact date of the introduction or recognition of measles in the New World is unknown. Hirsch states that measles was not recognized in Europe as a specific disease before the 18th century. Zinsser[76] on the other hand claims that measles was common among the natives of the New World in 1595 but that it was probably brought to America from the Old World. The disease has been a serious one to the Indians generally throughout Central America but for some particular reason it is fairly rare in the Coco Basin and only a few specific cases have been reported.

Typhus Fever

As far as can be ascertained typhus fever is extremely rare or does not occur among the Miskito Indians of the Coco. The disease apparently is of European origin but for some reason or other infected rats have not been introduced into eastern Nicaragua.

Whooping Cough

Whooping cough was introduced into America from Europe and caused the death of thousands of Indians and is particularly fatal to

[75] Díaz, Bernal. The true history of the Conquest of Mexico. Written in the year 1568. Translated by Maurice Keatinge: 1803. 2 vols. Salem and London.

[76] Zinsser, H. Rats, lice and history: 1935. Boston.

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them.[77] Sporadic epidemics of whooping cough have occurred in the Coco Basin and have always continued with considerable severity. Thousands of deaths from whooping cough were reported to the League of Nations in 1933 and 1934.[78] In the Coco Basin the children in a few villages have come down with this disease but because of the wide gaps between villages it has never spread entirely throughout the area. In short, the epidemics appear to become localized and have within the last 50 years decreased considerably in number. Thus, it can be said that considerable morbidity and mortality for whooping cough does occur at intervals of them but are localized in character.

Diphtheria

Diphtheria appears to be a relatively rare disease in the tropics; for instance, in the non-tropic areas such as Buenos Aires, the incidence per 100,000 persons was in 1929, 16.9; in Quebec, 23, and in Chicago in 1927, 13.8. In the tropic area in 1927 for Havana was 1.5; in 1928, 2.0; Guayaquil in 1930, 0.8; Veracruz in 1930, none; in Kingston in 1927-1929, none. Further north in Tampico the incidence was in 1930, 6.0; and in the Panama Zone in 1928, 9.9. Larsen[79] states that in the tropics diphtheria is a mild, seldom seen disease and rarely assumes epidemic proportions. This is of interest since Emerson[80] has shown that there is a significant difference in the cause and death incidence rates of diphtheria in various racial groups in New York City and he believes that the factor of race is the only one of importance which can be recognized. Be this as it may, the fact remains that today no case of diphtheria has been reported in the Coco Basin territory. This does not mean, however, that mild cases have not occurred since the disease might have been mistaken, if mild, for any of the upper respiratory diseases.

Pneumonia and Bronchial Pneumonia

At the time of our expedition through the Coco Basin we did not hear or not did we see any cases of pneumonia; however, we were in-

[77] Gann, Thomas, In an unknown land. 1924, New York.

[78] League of Nations Health Organization. Annual Epidemiological Reports, Geneva. For the year 1933, published in 1935; for the year 1934, published in 1936.

[79] Larsen, A. E. Variation of cosmopolitan diseases in tropical and temperate zones. Amer. Jour. Trop. Med., 1936, *16*, 91.

[80] Emerson, K. Future of program for tuberculosis control. Amer. Jour. Public Health, 1935, 25, 707-711.

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164 formed that pneumonia and bronchial pneumonia did exist and that at
171 certain times the disease would occur especially among infants with a very high morbidity and mortality. Pneumonia is however more common in the highland tropics. For instance, in Guatemala, where the incidence is equal to that of México, it is more than double than that for Massachusetts. The disease in the Coco Basin is not of paramount importance nor is it a public health problem. No statistics are available so that a proper description of this disease can not be given.

Tuberculosis

Hrdlicka[81] has said of pulmonary tuberculosis in Indian tribes that "this disease which in all probability is extremely rare, if it exists at all, in the prehistoric Indians, was seldom seen before a century ago (before 1808) and is gradually becoming everywhere more common". His observations indicated further that pulmonary tuberculosis in the Indian is usually fatal within a comparative short time.

But it has been noted[82] for instance in Guatemala that tuberculosis is an important cause of death in the larger cities; it is not prevalent in small communities. The real question, as raised by Shattuck, is does tuberculosis treaten to become a major problem in Central America. If so, little has been done to combat the disease in this area. Yudice[82] applied tuberculin tests to 447 children in El Salvador and found the Pirquet test positive in 47 per cent of the subjects (children 3 to 14 years old), and those in whom it was doubtful or negative gave 21 per cent positive Mantoux tests. In the reports dealing with North American Indians, Crouch[83] found 75 per cent positive among Indians of Montana and Coleman[84] stressed the view that Navajo Indians had practically no immunity to the disease. The factors involved appear to be those of racial susceptibility, poor food, bad hygiene, and the lack of treatment of contributing causes.

164 Although we were not able to secure the incidence of pulmonary tuberculosis among the Miskito Indians, two facts seeemed apparent. The first of these was that fever, cachexia, hemoptysis symptoms which developed rapidly and often terminated in death were common in the younger Indians who worked in mines. The other fact is that such

[81] Hrdlicka, Ales. Smithsonian Inst. Bur. Amer. Ethnol. 1909, Bull. 42.
[82] Yudice, Luis. Salv. Med., 217, ab. 1936. (Abstract in Bol. de la Oficina Sanitaria Panamerican, Sept. 1936, 883.)
[83] Crouch, J. H. U. S. Public Health Reports, 1932, 47, N° 38, 1907.
[84] Coleman, Nancy R. The Reservation Boarding Schools, Bull. 25, (Nov 1936), Natl. Assoc. on Indian Affairs, Inc., New York.

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clinical findings were rare among in Indians living in isolated villages and in those who subsisted on game and agriculture. This observation appeared to be common knowledge. 164

One case of tuberculous pleurisy with effusion was noted in a twenty years old boy and Bilwas and this subject was the only noted by us during the entire journey into the Coco Basin.

Malaria

In considering Central America, in 1881, Hirsch[72] has pointed out "that malarial diseases have their chief seat on the Atlantic (gulf) coast from Chagres up to Cape Gracias a Dios, and on the interior plain up to a height of 600 meters". Even though the disease occurs throughout the lowlands of Central America, there still remains today, the same striking disease problem on the eastern Atlantic areas. In fact, Malaria constitutes the major public health problem of the Miskito Coast.

Historically it is difficult to trace the presence of malaria in the New World prior to the conquest. In 1519, Cortes, Father Olmeda and Diaz had attacks of fever and similar illnesses occurred among some of their soldier[74] but the disease was mild and few deaths were attributable to it. There is no evidence that the military campaigns were handicapped by the fever. Stitt[85] in *Our Disease Inheritance from Slavery* lists tropical malaria (aestivo-autumnal) and black-water fever among the diseases introduced from Africa, and Carter[71] is "inclined to think that malaria did not exist in America prior to its discovery. It would of necessity have been introduced early by the Europeans and Negroes, and, *Anopheles* being generally present, it would have spread." On the other hand Joyeux and Sice[86] in quoting Paez say that malaria was present in Mexico prior to Columbus.

Malaria, clinically, is protean in character and follows no given set of rules. The contributing factors are many. These are the species of parasites and their biological properties, the severity of infection, the age and race of the patient, his resistance to the disease, the effects of relapse, the kinds and amounts of therapy used and the important aspects of intracurrent, recurrent and terminal infections.[87] The di-

[85] Stitt, E. R. U. S. Naval Med. Bull. 1928, 26, 801-833.

[86] Joyeux, C. and Sice, A. Precis de Medicine Coloniale, 1937, Masson et Cie. Paris.

[87] Cannon, P. R. Some Pathologic aspects of human malaria. Symposium on Human Malaria (Ed.: Moulton, F. R. 1941, American Association for the advancement of Science, Washington.)

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[164] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [757] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[83] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[83] Brumpt. E. Precis de Parasitologie, 4th ed., 1927, Paris.

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Combined results of the malarial survey at Saulpaca (Zapuca) and San Carlos 164

Age	*Total N° of Persons*	*Spleen examination Positive Splenomegaly*		*Positive Blood smear for parasites*	
Years		*Saulpaca*	*San Carlos*	*Saulpaca*	*San Carlos*
0-1	40	0	11	6	10
2-4	46	2	15	13	17
5-9	128	3	52	46	55
10-14	80	2	34	27	36
15-19	41	2	18	14	20
50-54	34	0	8	8	9

the proximity of Bilwas Karma where certain public health measures have been introduced to expect a decreased incidence of disease. However the problem of clinical malaria remains a challenge and suppressive measures with atabrine or similar drugs may do much for these communities; the use of effective insect control with modern insecticides may play a major role in the future village control of insect borne disease. From the values given in the examination for malaria it is obvious that the disease constitutes the mayor health problem of the area. At Waspam, Bilwas Karma, the following mosquitoes were collected by [136] our party, these were: *Anopheles albimanus, A. albitarsis, A. aquasalis, A. argyritaris, A. parapunctipennis, A. pseudopunctipennis,* (several varieties), *A. vestitipennis, and A. crucians* (reported to be collected by Kumm). *A. albimanus* was found in great numbers and is probably the principal transmitter of malaria. This species is found in humid tropical climates and its breeding places are in the swamps exposed to the sun. However it has been known to exist at altitudes of 1350 meters (Guatemala City) and is the most common vector.

Syphilis

Hrdlicka[80] has pointed out that there is no substantial evidence 164 of precolumbian syphilis. On the other hand Williams and Wakefield, 114 Dellinger and Camp[80] regard the conclusions of their studies as being 171 sufficient to substantiate the view that syphilis was endemic in North America prior to European contacts. Regardless of controversy, sy-

[80] Hrdlicka, A. Disease, medicine and surgery among American aborigines (Geo. M. Kober Lecture). Jour. Amer. Med. Assoc. 1932, 99, 1661.

[80] Wakefield, E. G. Dellinger, S. C. and Camp, J. D., Study of osseous remains of "mound builders" of eastern Arkansas. Amer. Jour. Med. Sciences, 1937, 193, 443.

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phils, today among Indians, is a disease that deserves further study. Dr. Mitchell Frank[91] has repeatedly stated that many cases with positive serologic evidence do not show clinical manifestations of syphilis nor is there anything which could be construed to indicate syphilis in the history. He points out furthermore that some of these cases on treatment have changes in serological findings but others do not. He has endeavored to perform all of precipitation — flocculation was well as the modifications of the Wasserman reactions and he is not satisfied with the status of this subject among Indians. Lynwalter[92] in 1923, in a study of Pueblo Indians found that 31 per cent had serologic evidence of syphilis and Dr. Frank does not believe that all these subjects were endowed with the disease. Plant[93] in South Dakota found serologic positives in Indians in 10.9 per cent of the men and 7.3 per cent of the women; Clarke[94] in New Mexico showed a serologic case rate of 1.5 for Indian males and 2.3 for Indian females. Dunham, Aberle, Farquhar and D'Amico[95] stated that positive serologic evidence was present in 2 per cent of the Indian children; Mountin and Townsend[96] report on incidence of 6.6 per cent among Indians studies. Pierce[97] has stated that there is something peculiar to the results obtained with precipitation flocculation tests among Indians and that the Wasserman reaction may be involved as well. Other considerations are the changing nature of the disease itself as exists over a period of years within a community and the effects of interracial marriages.

With regard to syphilis in Central Nicaragua, Rosenfeld[90] in his report stated "syphilis too is apparently very prevalent, several cases suggesting congenital and central nervous infections having been observed". It was, however, our impression that syphilis when present existed only in certain communities and rarely in others. Although there was no opportunity to perform routine serological testing, the clinical evidence of the disease was rare in all of the small

[91] Frank, Mitchell, Senior Physician, United Pueblos Agency, 1943, personal communication.

[92] From the Office of Indian Affairs, Washington, D. C. 1923.

[93] Plant, F. Paralysestudien bei Negern u. Indianern. 1926, Berlin.

[94] Clarke, W. Sangre impura in Mora: study of syphilis and certain other diseases in population of Mora County, New Mexico. Ann. of Int. Med. 1934, 7, 1936.

[95] Dunham, E. C., Aberle, S. D., Farquhar, L. and D'Amico, M. Physical status of 219 Pueblo Indian children. Amer. Jour. Dis. Children, 1937, 53, 739-49.

[96] Mountin, J. W., and Townsend, J. G. Treas. Dept. Pub. Health Service Bull. 1936, Bull. 223 (Feb).

[97] Pierce, L. F. Personal communication, 1943.

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villages on the Coco River. In and around Waspam, San Carlos, and Bilwas Karma several cases were seen which appeared to have the stigmata of the disease. Dr. Daniel F. Molloy of the Rockefeller Foundation once informed Dr. George Shattuck [82] that yaws in Honduras and in Nicaragua occurred in "nests". It was our impression that the same can be said for syphilis. Several cases were seen in and about Bilwas that were being treated and although the disease does not present itself as a major Public Health problem within the Coco Basin it is important that it be treated since there is every likelihood that it will spread.

Yaws

Yaws is a common disease in the tropic regions of Central America and it is often seen in the subjects of the Coco Basin. There appears to be some evidence that Yaws was an ancient disease in the Americas. Hirsch [72] and Shattuck [82] agree that yaws was an importation from Africa. In a survey of a hundred patients as San Carlos nine of them yaws, three of the subjects were boys between the ages of 10 and 18 who had the typical secondary eruption of yaws. The other six patients had a mixture of annular tertiary lesions and chronic eruptions. Treponema was demonstrated in four of the patients. Although no formal survey was undertaken, Dr. Thaeler and others[96] had the impression that the disease was common in the area. The treatment of the subjects with mapharsen and bismuth salicylate results in a dramatic response, and at the end of the third weekly injection most of the lesions had disappeared. It would appear to us that a definite program could be established with regard to the treatment of yaws wherein a sustained effort in a field project coud accomplish the treatment of the majority of the cases within a short period of time. Thus a team could enter into a territory and make a definite tour with a view of treating yaws. Although the disease would probably not be eliminated by such a measure it would no doubt be suppressed in its spread to a where it might considered a minor public health problem.

Pinta

The disease pinta is characterized by changes in pigmentation as a result of *Treponema Carateum* infection. Is is presumed to be of

[96] Rosenfeld, L. in his survey of March, 1943 found among 200 subjects at Raiti and San Carlos, 26 of them with yaws and 18 of them with Pinta and 2 with both diseases combined.

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164 pre-columbian origin. The disease was found to occur in 10 per cent of the population examined, some villages having more of the disease than others. Aside from discoloration of the skin no other symptoms could be found and it appeared to have little effect on the body economy of an individual. However, many persons were conscious of the discoloration, felt shy because of it and presumed themselves to be unclean. The disease was common in certain families and not in others though there seems to be no evidence for congenital transmission[99]. So far little or no treatment for the disease has taken place in this area.

Dysentery

If by dysentery we mean infectious diarrhea then this disease is not only prevalent in the tropics but it is associated by high morbidity and mortality. And since it is epidemic in quality it is bacterial in origin.* However it must not be forgotten that dysentery is a loose term denoting mainly a symptom complex. As such the disease can be caused by amoeba, by the ciliate *Balantidium coli*, by malaria (P. falciparum), by certain worms, and by *giardia*. The two most common types of dysentery are bacillary and amoebic and of these two the former is our primary concern.

Bacillary dysentery is common throughout the year in the Coco River basin but has its greatest epidemic quality during the beginning and end of the rainy seasons. The childhood mortality rate from the disease although not exact takes a toll of approximately ten per cent of the children afflicted by it. As far as could de determined with limited equipment the common etiological agent is *Shigella paradysenteriae Flexner*, an organism utilizing glucose, mannite, but not lactose or dulcite. [136]

164 514 The disease occurs chiefly in the larger villages; in the smaller villages it may be rare or have never occured. This is of interest from an epidemiological point of view since in some of the isolated small villages the carrier or the source of the organism is not available. In the larger villages, an example of which is San Carlos, the disease may debilitate a third to one half the population. In our opinion, at San Carlos the disease may be traced to certain wretched latrines within the business section of the village. Some of the latrines have been erected at considerable cost; others are make-shift devices for the conveniences of their owners. Regardless of cost the screens because

[99] Mackie, T. T., Hunter, G. W. and Worth, C. B. A. Manual of tropical medicine. Philadelphia, 1945.

* Dysentery bacilli, Salmonella, Staphylococci, etc.

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of rain and humidity have eroded, the pit fills with water and the entire construction fills with flies. The dysentery epidemics at San Carlos usually begin about these latrines and extend to the periphery of the village. 164 514

Another contributing factor to the spread of dysentery is that in some areas well meaning visitors have encouraged the use of milk for children. In a territory devoid of refrigeration or adequate sterilization the use of milk should be derived from the mother's breast or directly from the cow's udder. On the other hand milk products such as cheese are less likely to be infected. Nevertheless, milk fluid serves as an excellent bacterial medium. Powdered milk might obviate such a hazard. 164 262

Drinking water in the larger villages may be considered a source of infection since water may be stored in containers not ideally suited for such a purpose or the water may be collected from the main river or other pools simply because the source is conveniently located. 164 312

The Indian customs are such as to depress the occurrence of dysentery. These customs are to drink water from clear running creeks (see map of San Carlos), and to perform their ablutions either in the large river or to dig holes for their excremata. If holes are dug in the bush they are immediately covered up after use. The Indian, unless educated otherwise, considers the communal use of a structure such as a collecting booth for feces and urine as an evil. It would thus appear that the invading culture (Spanish American) with its convenient latrine often in juxtaposition to the latrine, has furthered the dysentery problem. 164 514

Some of the latrines observed were of such a character that even the investigators used to the inconveniences of the bush felt repelled by the utterly uninviting stench and the great scatter of soiled paper throughout the establishment. Toilet paper, in many tropical areas of high humidity, offers itself as a remarkable medium for growth of molds which renders the paper useless. Latrines built by special sanitary engineers were misused, had eroded screens and were halt filled with water. During the dry season when they were erected they were presumed to be ideal and satisfactory in every way.

If the wretched latrine is to be used, the use insecticides and disinfectants must be encouraged, otherwise dysentery will be present. The authors of this report endeavored to encourage the Indian practice of waste disposal.

Amoebic dysentery exists as far as could be determined in from 2-5 per cent of the population. Stool examinations at Waspam, revealed that 7 per cent of the adults and 2 per cent of the children had 164

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164 evidence of amoebic dysentery. Many of the patients were symptom free but gave clinical histories of occasional periods of cramps and blood and mucous in their stools. One person was seen in exhaustion from the chronic diarrhea of feces mingled with blood and mucous (sago-grain stool). Most of the people with the disease complain of easy exhaustion and appear to be chronically fatigued. This disease like bacillary dysentery is commonest in the larger villages where food has a greater opportunity to be contaminated by fecal matter or infected water. In isolated smaller villages the disease is rare, if ever present. The source of amoebiasis in such areas is not always simple to ascertain since many persons eat the same food and some become infected and others not. The role of carriers of the disease requires a special study which we were unable to perform.

Skin diseases

In many communities people are afflicted with tropical skin sores presumably of fungous origin. The diagnosis of the lesions is difficult, smears observed under the microscope reveal mycelia of all varieties. Certain ulcers may be of spirochaetal or bacterial etiology but we were not sufficiently specialized to assume the responsibility of a specific diagnosis. The persons in about one fourth of many communities have with some sort of mycotic lesion, in other communities skin diseases may be less in number. Needless to say there is no satisfactory method of treating the majority of such lesions. The usual lotions containing Salicylate, thymol, cooper sulfate, etc. may offer temporary improvement or increase the dermatitis. It would seem difficult to suppose that topical application of some agent would attack a mycelar structure extending into the deep tissues. It was our impression that a systematic drug was needed that would have fungicidal or fungistatic effects. Many of the natives informed the observers that lesions began as a chigger sore or as a result of an insect bite and one may speculate that fungus infection may occur in certain areas of the skin where a break in structure has occured. It is therefore recommended that sores or bites are treated with fungicidal agents providing, of course, that the agent does not in itself provoke a dermatitis.

Summary of disease among Coco River Miskito Indians:

Suggestions for amelioration

000 The salient public health problems of the Coco River Basin are

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primarily malaria, intestinal helminths, dysentery, and mycotic dermatoses and secondarily yaws, pinta, tuberculosis in mining districts.

The first suggestion towards amelioration is at least some understanding of the disease problems in an area and within that area of the peculiarities of a local situation. What for instance may offer a solution at San Carlos may not be exactly the case at Waspam. The second suggestion is to know the people with whom one is dealing. Their customs and ways are of utmost importance to a medical program. The physician should be a medical expert of society and if the society in which he moves is unable or unwilling to accept his methods then all of his efforts are in vain. If medical care is needed anywhere, the physician must adapt himself to the circumstances and provide health measures and services.

Among many Indian tribes, medicine and health are symbols the understanding of which belongs to the medicine man. He is a combination of sorcerer, priest and physician. It is only this combination that is satisfactory to the care of a society under certain circumstances. The sudden arrival of modern medicine in such a community does produce a conflict within the minds of the natives. How difficult it is to deal with persons within our own culture who for years have followed treatment dictated by popular belief, superstitions or views forced upon them by commercial interests. The field of patent medicine is a flourishing market and represents both inadequate and improper education of the public or the inability of the physician to cope with the social situation. The problem among native peoples is even more difficult and requires in the main a common sense approach towards human understanding based primarily in the recognition of feeling and sympathy for ones fellow-men. Observation, experience, experimentation and reasoning are the sources of knowledge.

The friendship of the people is to be desired and the cooperation of medicine men *(curandero, sukia)* is solicited. Wherever possible one is an aid to these people, working with them towards a gradual understanding of their problems. One collaborates with the shaman for he himself has a special role in society. Among the Miskito modern medicine is already known. The people understand the meaning of our anti-malarial drugs. Their own public health measures are fairly satisfactory and what is needed are specific control measures for certain diseases. This situation is peculiar to the Coco Basin and may differ elsewhere.

Since the medical care of the Coco Basin people is limited, in the modern sense, to but one physician and since medical care is needed throughout the area it is obvious that we must adapt our method of

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759 rendering health service to this situation. Physicians, in general, find the territory unremunerative and as a consequence cannot be induced to venture or remain in that region. We are therefore confronted with the problem of adapting our method to the situation even though the procedure introduced may not be ideal.

For this reason Dr. Thaeler at Bilwas Karma has trained young men to act as agents for the central clinic. The men arrive at Bilwas Karma and undergo a serious series of lectures and demonstrations, then a period of internship and are forthwith prepared to carry out limited medical activities in the communities from whence they came. In this process of adaptation it is important that the trainee return to his original community, for his people know him, place trust in him, and adaption to a porgram is simplified. Furthermore the trainee is at ease with his own people, his prestige is increased and his relatives offer adequate security for his success.

K4 The diseases in which an empirical diagnosis can be made with a
759 medicum of success are as follows: malaria; yaws; pinta; acute dysentery (presumably bacillary); chronic weaking dysentery; (presumably protozoal or helminthic); helminthes; and skin infections. The trainee is taught mainly in terms of these major diseases, first aid and rudimentary principles of child-bearing and pediatrics are secondary. The system ordinarily employed by the Indians in first aid is not to be condemned, obstetrics and pediatrics do not constitute subjects of sufficient public health importance to this region. The trainee is taught insect control measures and the use of certain specific drugs for the diseases just described. His medical supplies consist chiefly
278 of atabrine, oil of chenopodium, magnesium sulfate, sulfaquanidine, viaderm, carbarsone, antiseptics, gentian violet pills, a few miscellaneous drugs such as aspirin and some first aid equipment. The trainee is taught to send many of the patients whom he regards as special cases to the hospital. There is a possibility that such a system may
080 succeed, particularly if the trainee or agent is brought back to Bilwas for refresher courses. The merits of the system result from one basic fact and that is that Dr. Thaeler is a well trained clinician with considerable understanding of these Indians. It seems highly important that such a program be directed only by a well qualified physician or physicians who have had special training in medicine as applied to societies of varying cultural traits. This fact has been recognized to some extent by the British in their various schools of tropical or colonial medicine and by the United Fruit Company. In other instances tropical medicine may be academically isolated from the societies who should receive the results. The mistakes made by young physicians,

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without training in social affairs, who are sent partially trained to ~~~ regions containing peoples of different culture are too numerous to be cited. This situation alone is responsible for much of the limited success of the Indian Medical Service in the United States, and for that matter the role of the average physician in the society in which he lives. The plea is obviously one for further experimentation, there is no concise rule or formula to be applied. But special training is a requirement that must not be overlooked. Learning by experience alone is too long and too costly.

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262 [222] The Indians also secure honey from wild honey bees. In the Coco territory there are various species of stingless bees *(Meliponidae)*. The honey cells are circular and the honey is yellow and slightly acid in taste, it does not crystallize when kept for sometime. Previous to the introduction of sugar cane the honey was used to sweeten food.

The most important food of the Miskito Indian is the banana, even though it is not indigenous to America. As such this is one of the few examples where a food originally foreign to a people was immediately accepted an chronically utilized. On the other hand the use of cereals so common throughout the Americas, is infrequent. The reason for this is that cereals are difficult to grow in this territory. The numerous insects which attack certain types of vegetable or plant life restricts agricultural enterprise. Furthermore there appears to be no need of cereals in the diet. Beans have recently been introduced and in some communities they have been raised for eating purposes.

Oils are easily prepared from coconuts or varieties of nuts. These are crushed and placed in boiling water, and in due course the oil rises to the surface and is skimmed off.

262 177 It can be said that the Miskito Indians living as they are, unmolested, by the banks of rivers and streams secure enough wild fruits, vegetables, fish and game to adequately supply the yearly food. To this is added small agricultural projects of their own, such as banana plantations, citrus fruits, etc. When these Indians become sequestered in larger villages or are removed from their community to work for mines, rubber collection, or as laborers for fruit companies, the dietary deteriorates. To secure food under these new circumstances they need money, a substance which is easily expendable and does not represent a material which may be needed in the future. The Rubber Development Corporation has had in many instances fed laborers on foreign foods which have not always agreed with or been agreeable to workers.

NUTRITIONAL EVALUATION OF THE DIET

● 121 The evaluation of the nutritional status of individuals from any single examination of their diet is difficult if not impossible. There are widely divergent views regarding the needs of the body, as to the extent and character of the food requirements, of the relative merits of various foods and as to the degree and frequency of intake of the nutritional components. A survey of dietary intakes will often make one suspect a deficiency and may warn the investigator what to seek for In the end clinical appraisal is the only satisfactory method. There is

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today suficient evidence[36] to show that potential deficiency disease, latent deficiency disease and subclinical deficiency disease are unwarranted definitionally and that only the frank clinical manifestations are satisfactory for a diagnosis. Furthermore, the certain milder symptoms often ascribed to deficiency of a nutrient are more often related to another cause.[37] Thus, gingivitis has resulted, experimentally, from a deficiency of vitamin A,[38] of vitamin D,[39] of vitamin M,[40] of nicotinic acid [41] as well as ascorbic acid. Furthermore, most cases of gingivitis are unrelated to vitamin deficiency,[42], [43], [44] and in most instances does not respond to vitamin C therapy. Glossitis, furthermore, may be due to numerous causes other than nicotinic acid deficiency; cases with Bitot's spots are in most instances resistant to vitamin A therapy[45] and many exhibit vitamin A plasma levels usually encountered in healthy individuals.[46] Berliner[47] has questioned the diagnosis of xerosis conjunctivae as depicted by Kruse;[48] keratitis and corneal invasion found in rats on riboflavin free diets[49] does not occur in monkeys and in humans the lesions seen are more often due to other causes.[50] It must

[36] Dann, W. J., and Darby, W. J. The appraisal of nutriotional status (nutriture) in humans. Physiological Reviews, 1945, *25*, 326-346.

[37] Jeghers, H. Medical progress; nutrition; appearance of tongue as index of nutritional deficiency. New Eng. Jour. Medicine. 1942, *227*, 221-228.

[38] Wiehl, D. G., and Kruse, H. D. Milbank Mem. Fund. Quart. 1941, *19*, 241.

[39] Toppings, N. H., and Fraser, H. F. U. S. Public Health reports, 1939, 54, 416.

[40] Langston, W. C., Darby, W. J., Shukers, C. F., and Day, P. L. Nutritional cytopenia (Vitamin M deficiency) in monkey. Jour. Expl. Med. 1938, *68*, 923-940.

[41] Smith, D. T., Persons, E. L., and Harvey, H. I. On the identity of the Goldaberger and Underhill types of canine blacktongue. Jour. Nutrition, 1937, 14, 373.

[42] Restarski, J. S., and Pijoán, M. Gingivitis and vitamin C. Journal. Amer. Dent. Assoc., 1944, *31*, 1323-1327.

[43] Hess, A. H. Scurvy, past and present. Philadelphia, 1920.

[44] Stamm, W. P., Macrae, T. F., and Yudkin, S. Incidence of bleeding gums among RAF personnel and value of ascorbic acid in treatment. Brit. Med. Jour. 1944, *2*, 239.

[45] Metivier, V. M., Bitôt's spots in Trinidad. Amer. Jour. Ophth. 1941, *24*, 1029-1034.

[46] Darby, W. J. (unpublished observations, 1945).

[47] Berliner, M. L. Regarding early detection of avitaminosis A by gross or biomicroscopic examination of conjunctiva. Amer. Jour. Ophthal. 1942, *24*, 302-308.

[48] Kruse, H. D. Ocular manifestations of avitaminosis A. Dis. Eye, Ear, Nose and Throat. 1941. *1*, 272-287.

[49] Beasey, A. O., and Wolbach, S. B. Riboflavin deficiency in the rat. Jour. Expl. Med. 1939, *69*, 1

[50] Darby, W. J., and Milam, D. F. (1945, in press).

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121 be concluded that there exists no specific tissue alteration which alone may be considered pathognomonic of a single deficiency state: the deficiency must be characterized by all of the clinical signs and symptoms proven to result from a nutritional defect.

146 In regard to the Miskito Indians no cases of vitamin deficiency were observed, either by the use of the unproven criteria advocated by Kruse[51] or by the strict clinical evaluation of the subject. Marasmus and malnutrition were observed in infants suffering from diarrhoea, dysentery, or who were abandoned and deprived of food. But other than this finding, little can be said in favor of malnutrition. This becomes obvious in view of the foods these people consume: fruits in season and meats would militate against malnutrition. The people are generally robust and well built regardless of th[illegible]abits and while they eat only when hungry, without regular[illegible]must be admitted that such a method cannot be nutritionally unsound. At Waspook where large quantities of meat and vegetables are consumed the year round, eye lesions often ascribed to ariboflavinosis were commn but the local trader would generally assure a cure by selling dark glasses. The eye conditions were most bothlesome during the dry seasons and less so during the rainy season.

The brief study of the dietary habits show that the protein intake from animal food is high, that from legumes relatively low. It has been estimated that the Miskito Indian consumes from 150 to 300 gms. daily of protein, 150 gms. of fat and 200 gms. of carbohydrate; these figures vary somewhat but in general the relationship is about the same. Thus the caloric intake is from 2000-3000 calories daily. These are, of course, average figures determined over a period of time, since the Indian often goes withouh a significant food intake for periods of several days to a week. Except for the fact that the diet of the children may be somewhat low in calcium, there appears to be no dietary deficiencies among these people.

Some of the commonly consumed foods were analyzed and the results are as follows:

[51] Kruse, H. D. Handbook of Nutrition; medical evaluation of nutrional status. Jour. Amer. Med. Assoc. 1943, *20*, 584.

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124 It must be acknowledge that we were fortunate enough to find one physician who had established himself over a period of years in the area in question. This fact made the work much easier and obviated the use of time to form contacts with Indians. This made it possible to have the work continued with a reasonable assurance of success.

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HISTORICAL BACKGROUND

175 The eastern coast of Honduras and Nicaragua was discovered by Columbus in 1502, during his fourth and last voyage to the New World, when he was proceeding from Trujillo in Honduras to Nombre de Dios in Panama. However, he did not come in direct contact with the Indians of this area.[1] In the course of the following years the Spaniards endeavoured to take possession of this territory but the natives resisted most of the efforts of the colonizers. The Spaniards were chiefly in quest of loot but since gold was not found and the Indians gave them no end to trouble they centered their interests and energies upon the Pacific Coast.

Vague mention was made of the Atlantic seaboard Indians by Gon-

[1] Conzemius, E. Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicaragua. Smithsonian Institution, Bull. 106, 1932.

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[164] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [757] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[88] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[88] Brumpt. E. Precis de Parasitologie, 4th ed., 1927, Paris.

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ETHNOGRAPHICAL SURVEY OF THE MISKITO AND SUMU INDIANS OF HONDURAS AND NICARAGUA

By Eduard Conzemius

INTRODUCTION

131 The Miskito and Sumu inhabit the Atlantic side of Honduras and Nicaragua, from Rio Tinto or Black River (lat. 15° 50′ N.) to Rio Punta Gorda (lat. 11° 30′ N.). While the Miskito are found chiefly along the coast the Sumu are an inland tribe and extend westward within a short distance from the settlements of the Spanish-speaking population.

Together these two tribes occupy the larger part of the vast region generally known by the name of Mosquito Coast. This territory reaches from Cabo Honduras, near Trujillo, to Rio San Juan, at the Costa Rica boundary; that is, from the eleventh to the sixteenth degree north, an extension of about 550 miles by sea. From Cabo Honduras the coast runs at first in an easterly direction, then southeast as far as Cabo Gracias a Dios, whence it extends nearly due south.

103 Columbus, who discovered the country in 1502, gave the name *Costa de Orejas* "Coast of the Ears" to that part situated to the west of Cabo Gracias a Dios. The southern district of the Mosquito Coast became known in those days as *Cariay* or *Cariari*, *Veragua* or *Beragua*, *Castilla del Oro* "Golden Castile." These names were superseded by the Spanish-Mexican terms *Taguzgalpa* and *Tologalpa*, which stuck practically throughout the colonial period.

The name "Mosquito Coast" (Mosquito Territory or Mosquito Shore), employed by the English, has been taken from that of the principal Indian tribe, the Miskito, erroneously called Mosquito; the Spaniards translated it into *Mosquitia* and *Costa de Mosquitos* (*Costa Mosquita*). Many believe that this name has arisen from the numerous mosquitoes to be found in the country, while others think that the small islands off the coast, "which lie as thick as mosquitoes," may have caused the appellation.

133 Orography.—The shore of the Mosquito Coast is partly alluvial and partly coralline; to the south of Cabo Gracias a Dios the land is gaining on the sea, but to the north of that cape the reverse appears to be the case.

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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

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In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tāwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:

a, e, i, o, u, correspond to the sounds of these vowels in German or Spanish.
ai as ai in "aisle."
au as ou in "how."
oi as oi in "boil."
ŋ as ng in "sing."
x as Spanish j or German ch in "ach" or Scotch ch in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
All the other letters have approximately the same value as in English.

1: Conzemius M-4, 5 (1921) 1932
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the Ulwa inhabit the southern section of the territory in consideration, from Rio Grande to Rio Punta Gorda. 101 131

The Bawihka are limited to Rio Banbana, a large northern affluent of the lower Prinsapolca. The Miskito call them generally *Sumu-sirpi* "small Sumu" or by the misleading name *Twahka*, but among all the Sumu they are known as "Bawihka." This latter name is not mentioned by Lehmann, the latest investigator into the languages of Central America. The Bawihka were formerly also found on the Wawa and Kukallaya, but they were expelled from these regions by the Twahka, and then settled on Rio Banbana. Most of them are living at the village Wasakin (*was-sa-kin*), "Rocks of the black water."

The Kukra formerly occupied the coast and shores of the lagoons from Rio Grande to the southern extremity of Bluefields Lagoon. They have always refused all intercourse with the Miskito and the foreigners, but occasionally communicated with the neighboring Ulwa for trading purposes. Toward the middle of the nineteenth century some rubber cutters ventured into their territory, and at Kukra Hill, northwest of Bluefields, they captured a few Indians who wore nothing but a loincloth of white tunu and a collar of shells and animal teeth. They were taken to Bluefields, but died soon afterwards. After this incursion into their country the remaining Indians went inland to the Rio Siquia, where they apparently became absorbed by their kindred, the Ulwa. At Pearl Lagoon may be met a few Miskito who are mixed with Kukra.

Other Sumu subtribes, which are already extinct now, are the *Yusku* (*Yosko*), *Prinsu*, *Boa*, *Silam*, and *Ku*. The Yusku lived on the rivers Tuma and Bocay; they are said to have been very bad and were exterminated by the other Sumu in the course of prolonged wars. The Prinsu lived on Rio Prinsapolca, which owes its name to them. They intermarried with the Miskito and the offspring became known as *Tusila* or *Tongula* who formed a separate tribe speaking a corrupted Miskito but retained many Sumu customs. The Boa lived on the headwaters of Rio Grande, while the Silam and Ku lived along the Waspuk River.

The Spanish historians of the sixteenth century included the Sumu under the general term "Chontal" or "Chondal," a Mexican word which means merely "stranger," "foreigner," and was applied by the Nahuatl to any primitive tribe. In later documents the Sumu are mentioned as "Caribes," "Chatos," "Albatuinas" (from the Miskito *Albawina*) and by a number of other names. To-day the whole group is generally known by the Miskito designations "Sumu" or "Smu," which have already been used by Bell and Wickham. Some writers have mentioned the whole group under the names Twahka and Ulwa, which, properly speaking, should be 101

1: Conzemius M-4, 5 (1921) 1932
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The sediment, trees, logs, and the like, brought down by the rivers are deposited at their mouth at the sea, thus forming dangerous sand banks with only a few feet of water, which can be crossed in safety only by vessels of little draft. These openings into the sea, or bars, as they are called, are much safer when the streams flow first into a lagoon, instead of directly into the sea, for in that case the sediment is deposited in the lagoon.

CLIMATE.—The climate of the country is tropical, but it is greatly modified by the configuration of the soil and the prevailing winds. The nights are always cool. The average temperature is about 80° F. (26° C.); the thermometer rarely registers higher than 90° F. (32° C.) or falls below 65° F. (17° C.). January is the coldest month of the year.

The country is not as unhealthy as is generally supposed. The old English authors considered it fairly good, and there is no justification for the bad reputation it has now, not only among Europeans and North Americans but also among the Central Americans inhabiting the highlands of the interior or the Pacific slope. Numerous foreigners have lived in the country many years and have retained their health. Unless one is particularly susceptible to malaria or other tropical diseases, no bad effects are liable to attend a prolonged sojourn in the country, provided proper care is taken.

The cool sea breeze, which blows almost constantly around the lagoons, renders the air fresh and agreeable. During eight months of the year the east trades blow nearly uninterruptedly and greatly modify the effects of the heat, so that the latter is never suffocating. The great difference from our own climate does not consist so much in the higher temperature recorded as in the absence of really cold weather, which contributes so much to the vigor and "pep" of northern people.

From November to February northers may appear on the Nicaraguan coast, but they are not so dangerous to navigation as on the shore of Honduras. During a wet norther the weather is disagreeably cold, but a dry norther is pleasant and invigorating. From the middle of June to the middle of August the Nicaraguan coast is subject to squalls and sudden gusts of wind from the southeast and the south, which are a great danger to seagoing canoes. Revolving storms, commonly called hurricanes, occur occasionally on the coast, but they are never so violent and destructive as in the West Indies or around the Gulf of Mexico.

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coast. The rainfall is enormous, especially at San Juan del Norte or Greytown. According to the records of the Nicaragua Canal Co. over 296 inches fell at the latter place in 1890, which makes it perhaps the wettest area in America.

The northeast trade winds, which prevail on the Mosquito Coast, become saturated with moisture as they pass over the Caribbean Sea, which is precipitated as they meet the ranges of hills in the interior. Rarely does it rain, however, the whole day long; heavy showers, accompanied by violent winds, pour down enormous quantities of rain, after which the sun makes its appearance again. During the rainy season entire days may pass without a single drop of rain, while, on the other hand, light showers are frequent during the so-called dry season.

Roughly speaking, north of Rio Patuca the *verano* "summer," or dry season, lasts from the middle of February to the middle of May, and again from the beginning of August to the end of September. The remainder of the year is known as *invierno* "winter," or rainy season. The wettest and most disagreeable month of the year is October. The heavy rains pouring down during this month are known as *chubascos* among the Ladinos; they correspond to the *temporales* of the interior and to the *tapayagües* of the immediate Pacific coast.

South of Rio Patuca the rainy season lasts from May to January, with occasional spells of fair weather in September and sometimes also in October. The heaviest rains occur in June and July and are accompanied by thunder and lightning. These thunderstorms disappear as quickly as they come and give way to bright sunshine. April is the driest month of the year, but it is never free from numerous light showers.

VEGETABLE KINGDOM.—The difference in the rainfall between the two coasts of Central America is manifested in the contrasting aspect of the forests. Under the stimulating influence of the moist climate, which reigns practically throughout the year, the Mosquito Coast maintains an exuberant growth of vegetation and the forests never lose their brilliant evergreen foliage. On the Pacific slope, however, where long periods of drought check vegetative vigor, the forests present during the dry season an autumnal appearance, relieved by green stripes along the rivers. In the latter region may be observed the curious habit, possessed by several unrelated species, of producing flowers and fruits while the tree is entirely leafless.

Immediately along the seashore the soil is sandy and there is little vegetation, but it is partly fitted for pastures owing to the annual overflow of the rivers. Beyond this coastal region extends a strip of swampy land, about 15 to 20 miles wide, which is largely unfit for cultivation and is covered with a dense and impenetrable thicket of

3: Pijoan D-5 (ca. 1945) 1946
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The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two set seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

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ETHNOGRAPHICAL SURVEY OF THE MISKITO AND SUMU INDIANS OF HONDURAS AND NICARAGUA

By Eduard Conzemius

INTRODUCTION

131 The Miskito and Sumu inhabit the Atlantic side of Honduras and Nicaragua, from Rio Tinto or Black River (lat. 15° 50′ N.) to Rio Punta Gorda (lat. 11° 30′ N.). While the Miskito are found chiefly along the coast the Sumu are an inland tribe and extend westward within a short distance from the settlements of the Spanish-speaking population.

Together these two tribes occupy the larger part of the vast region generally known by the name of Mosquito Coast. This territory reaches from Cabo Honduras, near Trujillo, to Rio San Juan, at the Costa Rica boundary; that is, from the eleventh to the sixteenth degree north, an extension of about 550 miles by sea. From Cabo Honduras the coast runs at first in an easterly direction, then southeast as far as Cabo Gracias a Dios, whence it extends nearly due south.

103 Columbus, who discovered the country in 1502, gave the name *Costa de Orejas* "Coast of the Ears" to that part situated to the west of Cabo Gracias a Dios. The southern district of the Mosquito Coast became known in those days as *Cariay* or *Cariari*, *Veragua* or *Beragua*, *Castilla del Oro* "Golden Castile." These names were superseded by the Spanish-Mexican terms *Taguzgalpa* and *Tologalpa*, which stuck practically throughout the colonial period.

The name "Mosquito Coast" (Mosquito Territory or Mosquito Shore), employed by the English, has been taken from that of the principal Indian tribe, the Miskito, erroneously called Mosquito; the Spaniards translated it into *Mosquitia* and *Costa de Mosquitos* (*Costa Mosquita*). Many believe that this name has arisen from the numerous mosquitoes to be found in the country, while others think that the small islands off the coast, "which lie as thick as mosquitoes," may have caused the appellation.

3133 Orography.—The shore of the Mosquito Coast is partly alluvial and partly coralline; to the south of Cabo Gracias a Dios the land is gaining on the sea, but to the north of that cape the reverse appears to be the case.

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133 In front of the coast, especially from Caratasca Lagoon to Monkey Point, or Punta Mico, are scattered numerous small islands, cays, coral reefs, shoals, and sand banks, which render navigation rather difficult.

The land rises gradually from the sea. The transverse ranges, radiating from the principal chain in the interior, form a series of terraces which gradually lessen in elevation until they disappear in the low coastal region. Low hills are met with at about 100 to 150 miles inland. Small isolated hills exist at different points within a short distance from the shore, and at Punta Mico and westward of Iriona spurs of the great central chain extend to the sea.

There are no active volcanoes. Earthquakes are not of frequent occurrence and they never do any damage; the heavy thunder occasionally conveys the impression that the earth is shaking.

133 487 HYDROGRAPHY.—The whole of this area is well watered by numerous streams running nearly parallel to each other; they flow into the Caribbean Sea, or rather into a chain of so-called lagoons or brackish water seas, of which the largest one is that of Caratasca. These water sheets are situated parallel with the coast and are separated from the sea, as well as from each other, by low, narrow, sandy necks of land, called locally "haulovers," from the custom of dragging the canoes over them. Thanks to this inland water system, canoes may proceed in smooth water, except for short intervals, from Iriona to Bluefields, thus avoiding the dangerous and unpleasant sea voyage during rough weather.

The rivers are in many parts the only means of communication. In the lower part of their course they are navigable for small sailing vessels, flat-bottomed steamboats, and motor boats. Beyond the region of the falls and rapids only small canoes and pitpans may continue, and they with great difficulty. The largest rivers of the Mosquito Coast are the following: Aguan, Tinto, Patuca, Coco (or Wanks), Grande (or Great), Escondido (or Bluefields), and San Juan.

During flood times these streams rise tremendously, occasionally as much as 40 feet during a single night. The crumbling banks bring down trees which, sweeping down the rapid current, render navigation dangerous. At places where the banks are low the neighboring country is inundated. These floods disappear as rapidly as they come. Owing to the great variations in level to which these rivers are subject, traffic is stopped or impeded occasionally, during the rainy season on account of the great impetuosity of the water and during the dry season from inadequate draft. In this respect Rio San Juan is an exception, the steadiness of its flow being maintained by the two great lakes of Nicaragua which act like a reservoir, and of which it is the only outlet.

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The country is not as unhealthy as is generally supposed. The old English authors considered it fairly good, and there is no justification for the bad reputation it has now, not only among Europeans and North Americans but also among the Central Americans inhabiting the highlands of the interior or the Pacific slope. Numerous foreigners have lived in the country many years and have retained their health. Unless one is particularly susceptible to malaria or other tropical diseases, no bad effects are liable to attend a prolonged sojourn in the country, provided proper care is taken.

The cool sea breeze, which blows almost constantly around the lagoons, renders the air fresh and agreeable. During eight months of the year the east trades blow nearly uninterruptedly and greatly modify the effects of the heat, so that the latter is never suffocating. The great difference from our own climate does not consist so much in the higher temperature recorded as in the absence of really cold weather, which contributes so much to the vigor and "pep" of northern people.

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mangroves, reeds, and coarse grasses. Then follows the real tropical forest with very fertile soil, consisting on the surface of vegetable humus. In order to penetrate the forest the hunter has to cut his way through the tangled mass of vines and epiphytes with the aid of his machete.

North of Rio Patuca the fertile areas are characterized by the existence of extensive "cohune ridges," that is, places dotted with the cohune or corozo palm (*Attalea* sp.). A great number of other palms are found in this region, but only two of them are cultivated and play an important part in the food supply, the coco palm and the pejivalle. Among the other tree forms characteristic of the forest may be mentioned the following: Ceiba (*Ceiba pentandra* Gaertn.), mahogany (*Swietenia macrophylla* King), Spanish or West Indian cedar (*Cedrela* sp.), rosewood, rubber tree (*Castilla* sp.), sapodilla (*Sapota zapotilla*), lignum vitae or guayacán (*Tecoma* sp.), Santa Maria or calaba (*Calophyllum brasiliense* var.), and balsa or corkwood (*Ochroma lagopus*). Epiphytic orchids are especially numerous and rare varieties are also found. The strong withes or *bejucos* on the trees are used in basketry and as a tying material.

From Rio Tinto to Rio Grande the dense forest is at times interrupted by large areas of pine ridges or savannas. These are undulating plains covered with gravel or coarse sand, overgrown with grass, myrtaceae, oaks, nances, small fan palms and long leaf or pitch pines. This pine (*Pinus tenuifolia* Benth.) has its southern limit on the Atlantic side of Nicaragua, a little north of Bluefields Bluff, in latitude 12° 5′ north. Few big trees are to be found in these savannas; there is little underbrush, epiphytes and lianas are scarce, and the whole presents a parklike appearance. On the rich alluvial soil on both sides of the streams traversing the savannas grows a dense and luxuriant vegetation resembling the real forest.

ANIMAL KINGDOM.—Zoologically the Mosquito Coast belongs to South America rather than to North America. In this sparsely inhabited region may be found a great number of species of animal life. The largest mammals are the tapir and the manatee; the latter is still an important animal of food for the Indians, but it is getting rare now.

In the jungle are found such beasts of prey as the jaguar, the puma or cougar, and the ocelot; a black variety of the jaguar is occasionally met with. The howling monkey, the spider monkey, and the white-faced or capuchin monkey are found on the tree tops; the two last-named ones are, together with two species of deer and two species of peccary, the most important food animals of the Indians.

Three species of anteaters, many armadillos and opossums, and 2-toed and 3-toed sloths may be met with. Among the rodents may be mentioned the agouti, paca, several species of porcupine, squirrels,

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and rabbits. The raccoon, the coati or pisote, the weasel, the skunk, and the kinkajou are met with in the forests and the otter exists in all the streams.

Alligators and a small species of crocodile infest the rivers, lagoons, and swamps. Several varieties of river turtles or tortoises occur, while the valued hawk's bill, the green turtle, and the loggerhead are caught in the sea. The largest lizards are the iguanas, which occur in several eatable varieties. Poisonous and harmless snakes are numerous.

Man-eating sharks and sawfishes are found in the sea and in the lower course of the streams.

The "john crow" or turkey buzzard is a useful scavenger. During the winter months many of the common North American birds arrive as immigrants and spend the cold season in this mild climate. Guans, curassows, mountain hens, wild ducks, and pigeons are esteemed as food. Trogons, orioles, toucans, tanagers, macaws, parrots, parrakeets, and humming birds make themselves conspicuous by their plumage or by their song. Flamingos, white egrets, and herons are found chiefly around the lagoons and swamps.

The mosquitoes are the propagators of malaria, while red bugs, ticks, cockroaches, jiggers, sandflies, and screw worms are largely responsible for the prevailing skin troubles.

INHABITANTS.—The humid tropical climate, combined with the jungle vegetation, have retarded settlement and the building up of a dense population. The bulk of the inhabitants of the Mosquito Coast are found along the seashore and on the lower part of the larger rivers.

Besides the *Miskito* and *Sumu*, with whom the present monograph will deal, two other Indian tribes inhabit the Mosquito Coast, the *Paya* and *Rama*. The former live in Honduras between Rio Patuca and Rio Sico. Their number is estimated at about 700 and they are dying out rapidly (vide Conzemius, b). The Rama tribe, the bulk of which lives on Rama Key in Bluefields Lagoon, numbers only about 200. Its language is of Chibcha stock and is closely allied to those spoken by the aborigines of Costa Rica, Panama, Colombia, and northern Ecuador (vide Conzemius, c). The western portion of the Mosquito Coast was formerly occupied by the *Matagalpa*, whose language has been extinct for nearly half a century; a dialect of it is still spoken to this day in the villages of Cacaopera and Lislique (Salvador). A number of other tribes have been reported from the country under consideration in former days, but as they have been extinct for some time it has been impossible to classify them. Some of the tribal designations applied by the early authors are merely derived from the rivers upon which the tribes lived.

From Rio Tinto northward along the sea and lagoons live the so-called *Black Carib* or *Garif*. These are the descendants of the

3: Pijoan D-5 (ca. 1945) 1946
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The solution of ethnological problems by the helminthological approach is not without its difficulties and as such is beyond the scope of this report. On the basis of Sandground's data the prevailing hookworm infection among pure blooded Indians should be *Ancylostoma duodenale* but where Negroes have settled and intermingled the infestation becomes dominantly *Necator americanus*. In the Coco Basis, where hookworms were introduced primarily by negroes, the infestation, as far as our observations permitted, was that of *N. americanus*.

It is of interest to note that onchocerciasis was not found in the Coco Basin even though the writer thought he had found two patients with this disease. The biopsy material was poorly prepared and there was some question as to the identity of the filarial worms. That the diagnosis was probably erroneous was further strengthened by the fact that *Simulium* flies transmitting this disease were not seen. However, the limited observations in searching for the fly were by no means thorough and do not exclude the possibility of their existence or that of the disease. It may be that in years to come when commerce between natives is increased the appearance of onchocerciasis may become an obvious clinical finding.

Cases of Schistosomiasis have been reported from Panama, Costa Rica and Yucatán but none have been reported from Guatemala[70] nor were we able to find any in Central Nicaragua. Even though *S. mansoni* and *S. hematobium* are of Ethiopian origin, the appearance of negroes in the Coco Basin did not introduce the disease and this fact is ascribed to the absence of the species of snails suitable for the larval development of the parasite.

The commonest worm infestations in the Indians of the Coco Basin were *Ascaris lumbricoides* and *Trichuris trichiura*. The former was common in communities which do not possess sanitary facilities and is contracted by ingesting eggs that are expelled in the feces. The latter, "whip worms", whose eggs are able to withstand adverse environmental conditions, almost to the same extent as those of Ascaris, was commoner than the former and the "pinworm" *Enterobius vermicularis* was frequently found. *T. saginata* and *T. solium* have been noted by others in the area studied but were not observed by us.

[70] Sandground, J. H. Helminthic infections in Guatemala in a Medical Survey of Guatemala, Carnegie Institution of Washington, 1938.

3: Pijoan D-5 (ca. 1945) 1946
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The mosquito, *Aedes aegypti*, the transmitter of the disease, is common in the territory but is apparently uninfected. Even in the listing of Hirsch there is no report of yellow fever in Nicaragua until 1868 and it is possible for geographical reasons that the disease failed to appear in the Coco Basin. According to Raynal[73] several outbreaks of yellow fever occured in nearby Guatemala (San José, 1859; Escuintla, 1868; Retalhuleu, 1881 and 1895), and this would confirm Hirsch's notation of yellow fever in Nicaragua in 1868.

It must be recalled that a high mortality occurs from yellow fever only when the disease appears in a relatively non-immune population or when the disease has been carried to immune territories. It is possible therefore that the disease, if present at one time, could be quiescent in certain areas for a period of years and since small numbers of travellers visit central and eastern Nicaragua, very few, if any, infective people enter the territory. With this in mind it would appear plausible to suppose that the vector insect has not had opportunity for obtaining the virus.

Plague

Although common in Europe during the 16th and 17th centuries, plague did not reach the New World until late in the 19th century, when it appeared for the first time in San Francisco, México, and other scattered territories. Plague is unknown in the Coco Basin and as a result presents no public health problem.

Cholera

The first pandemic of cholera probably started in Indian between 1817 and 1823 but did not reach the New World until between 1826 and 1837.[73] In 1837, according to Bancroft[74] the epidemics of cholera began to make their appearance through Guatemala and in other parts of Central America; in Nicaragua in 1855 it became a serious problem. In 1856 it crippled Mora's army in Nicaragua and continued its course. Walker's army was devastated by it.[74] The disease spread quickly throughout Central America and continued in El Salvador and Guatemala until near the end of 1857. It broke out again in Nicaragua in 1866 and continued in Honduras until 1871. In spite of the poor sanitary conditions today the presence of the disease has apparently

[73] Raynal, J. Annales de médicine et de pharmacie coloniales. 1932, *30*, 59, Paris.

[74] Bancroft, H. H. History of Central America, 1883, 1887, vols. 7 and 8. San Francisco.

3: Pijoan D-5 (ca. 1945) 1946
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Combined results of the malarial survey at Saulpaca (Zapuca) and San Carlos

Age	*Total N° of Persons*	*Spleen examination Positive Splenomegaly*		*Positive Blood smear for parasites*	
Years		*Saulpaca*	*San Carlos*	*Saulpaca*	*San Carlos*
0-1	40	0	11	6	10
2-4	46	2	15	13	17
5-9	128	3	52	46	55
10-14	80	2	34	27	36
15-19	41	2	18	14	20
50-54	34	0	8	8	9

the proximity of Bilwas Karma where certain public health measures have been introduced to expect a decreased incidence of disease. However the problem of clinical malaria remains a challenge and suppressive measures with atabrine or similar drugs may do much for these communities; the use of effective insect control with modern insecticides may play a major role in the future village control of insect borne disease. From the values given in the examination for malaria it is obvious that the disease constitutes the mayor health problem of the area. At Waspam, Bilwas Karma, the following mosquitoes were collected by our party, these were: *Anopheles albimanus, A. albitarsis, A. aquasalis, A. argyritaris, A. parapunctipennis, A. pseudopunctipennis,* (several varieties), *A. vestitipennis, and A. crucians* (reported to be collected by Kumm). *A. albimanus* was found in great numbers and is probably the principal transmitter of malaria. This species is found in humid tropical climates and its breeding places are in the swamps exposed to the sun. However it has been known to exist at altitudes of 1350 meters (Guatemala City) and is the most common vector.

Syphilis

Hrdlicka[69] has pointed out that there is no substantial evidence of precolumbian syphilis. On the other hand Williams and Wakefield. Dellinger and Camp[70] regard the conclusions of their studies as being sufficient to substantiate the view that syphilis was endemic in North America prior to European contacts. Regardless of controversy, sy-

[69] Hrdlicka, A. Disease, medicine and surgery among American aborigines (Geo. M. Kober Lecture). Jour. Amer. Med. Assoc. 1932, 99, 1661.

[70] Wakefield, E. G. Dellinger, S. C. and Camp, J. D., Study of osseous remains of "mound builders" of eastern Arkansas. Amer. Jour. Med. Sciences, 1937, 193, 448.

3: Pijoan D-5 (ca. 1945) 1946
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pre-columbian origin. The disease was found to occur in 10 per cent of the population examined, some villages having more of the disease than others. Aside from discoloration of the skin no other symptoms could be found and it appeared to have little effect on the body economy of an individual. However, many persons were conscious of the discoloration, felt shy because of it and presumed themselves to be unclean. The disease was common in certain families and not in others though there seems to be no evidence for congenital transmission[99]. So far little or no treatment for the disease has taken place in this area.

Dysentery

If by dysentery we mean infectious diarrhea then this disease is not only prevalent in the tropics but it is associated by high morbidity and mortality. And since it is epidemic in quality it is bacterial in origin.* However it must not be forgotten that dysentery is a loose term denoting mainly a symptom complex. As such the disease can be caused by amoeba, by the ciliate *Balantidium coli*, by malaria (P. falciparum), by certain worms, and by *giardia*. The two most common types of dysentery are bacillary and amoebic and of these two the former is our primary concern.

Bacillary dysentery is common throughout the year in the Coco River basin but has its greatest epidemic quality during the beginning and end of the rainy seasons. The childhood mortality rate from the disease although not exact takes a toll of approximately ten per cent of the children afflicted by it. As far as could de determined with limited equipment the common etiological agent is *Shigella paradysenteriae Flexner*, an organism utilizing glucose, mannite, but not lactose or dulcite.

The disease occurs chiefly in the larger villages; in the smaller villages it may be rare or have never occured. This is of interest from an epidemiological point of view since in some of the isolated small villages the carrier or the source of the organism is not available. In the larger villages, an example of which is San Carlos, the disease may debilitate a third to one half the population. In our opinion, at San Carlos the disease may be traced to certain wretched latrines within the business section of the village. Some of the latrines have been erected at considerable cost; others are make-shift devices for the conveniences of their owners. Regardless of cost the screens because

[99] Mackie, T. T., Hunter, G. W. and Worth, C. B. A. Manual of tropical medicine. Philadelphia. 1945.

* Dysentery bacilli, Salmonella, Staphylococci, etc.

1: Conzemius M-4, 5 (1921) 1932
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132 coast. The rainfall is enormous, especially at San Juan del Norte or Greytown. According to the records of the Nicaragua Canal Co. over 296 inches fell at the latter place in 1890, which makes it perhaps the wettest area in America.

The northeast trade winds, which prevail on the Mosquito Coast, become saturated with moisture as they pass over the Caribbean Sea, which is precipitated as they meet the ranges of hills in the interior. Rarely does it rain, however, the whole day long; heavy showers, accompanied by violent winds, pour down enormous quantities of rain, after which the sun makes its appearance again. During the rainy season entire days may pass without a single drop of rain, while, on the other hand, light showers are frequent during the so-called dry season.

Roughly speaking, north of Rio Patuca the *verano* "summer," or dry season, lasts from the middle of February to the middle of May, and again from the beginning of August to the end of September. The remainder of the year is known as *invierno* "winter," or rainy season. The wettest and most disagreeable month of the year is October. The heavy rains pouring down during this month are known as *chubascos* among the Ladinos; they correspond to the *temporales* of the interior and to the *tapayagües* of the immediate Pacific coast.

South of Rio Patuca the rainy season lasts from May to January, with occasional spells of fair weather in September and sometimes also in October. The heaviest rains occur in June and July and are accompanied by thunder and lightning. These thunderstorms disappear as quickly as they come and give way to bright sunshine. April is the driest month of the year, but it is never free from numerous light showers.

137 VEGETABLE KINGDOM.—The difference in the rainfall between the two coasts of Central America is manifested in the contrasting aspect of the forests. Under the stimulating influence of the moist climate, which reigns practically throughout the year, the Mosquito Coast maintains an exuberant growth of vegetation and the forests never lose their brilliant evergreen foliage. On the Pacific slope, however, where long periods of drought check vegetative vigor, the forests present during the dry season an autumnal appearance, relieved by green stripes along the rivers. In the latter region may be observed the curious habit, possessed by several unrelated species, of producing flowers and fruits while the tree is entirely leafless.

Immediately along the seashore the soil is sandy and there is little vegetation, but it is partly fitted for pastures owing to the annual overflow of the rivers. Beyond this coastal region extends a strip of swampy land, about 15 to 20 miles wide, which is largely unfit for cultivation and is covered with a dense and impenetrable thicket of

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

mangroves, reeds, and coarse grasses. Then follows the real tropical forest with very fertile soil, consisting on the surface of vegetable humus. In order to penetrate the forest the hunter has to cut his way through the tangled mass of vines and epiphytes with the aid of his machete. 137

North of Rio Patuca the fertile areas are characterized by the existence of extensive "cohune ridges," that is, places dotted with the cohune or corozo palm (*Attalea* sp.). A great number of other palms are found in this region, but only two of them are cultivated and play an important part in the food supply, the coco palm and the pejivalle. Among the other tree forms characteristic of the forest may be mentioned the following: Ceiba (*Ceiba pentandra* Gaertn.), mahogany (*Swietenia macrophylla* King), Spanish or West Indian cedar (*Cedrela* sp.), rosewood, rubber tree (*Castilla* sp.), sapodilla (*Sapota zapotilla*), lignum vitae or guayacán (*Tecoma* sp.), Santa Maria or calaba (*Calophyllum brasiliense* var.), and balsa or corkwood (*Ochroma lagopus*). Epiphytic orchids are especially numerous and rare varieties are also found. The strong withes or *bejucos* on the trees are used in basketry and as a tying material. [285]

From Rio Tinto to Rio Grande the dense forest is at times interrupted by large areas of pine ridges or savannas. These are undulating plains covered with gravel or coarse sand, overgrown with grass, myrtaceae, oaks, nances, small fan palms and long leaf or pitch pines. This pine (*Pinus tenuifolia* Benth.) has its southern limit on the Atlantic side of Nicaragua, a little north of Bluefields Bluff, in latitude 12° 5′ north. Few big trees are to be found in these savannas; there is little underbrush, epiphytes and lianas are scarce, and the whole presents a parklike appearance. On the rich alluvial soil on both sides of the streams traversing the savannas grows a dense and luxuriant vegetation resembling the real forest.

ANIMAL KINGDOM.—Zoologically the Mosquito Coast belongs to South America rather than to North America. In this sparsely inhabited region may be found a great number of species of animal life. The largest mammals are the tapir and the manatee; the latter is still an important animal of food for the Indians, but it is getting rare now. 136

In the jungle are found such beasts of prey as the jaguar, the puma or cougar, and the ocelot; a black variety of the jaguar is occasionally met with. The howling monkey, the spider monkey, and the white-faced or capuchin monkey are found on the tree tops; the two last-named ones are, together with two species of deer and two species of peccary, the most important food animals of the Indians. [224]

Three species of anteaters, many armadillos and opossums, and 2-toed and 3-toed sloths may be met with. Among the rodents may be mentioned the agouti, paca, several species of porcupine, squirrels,

2: Kirchhoff E.-4 (no date) 1948

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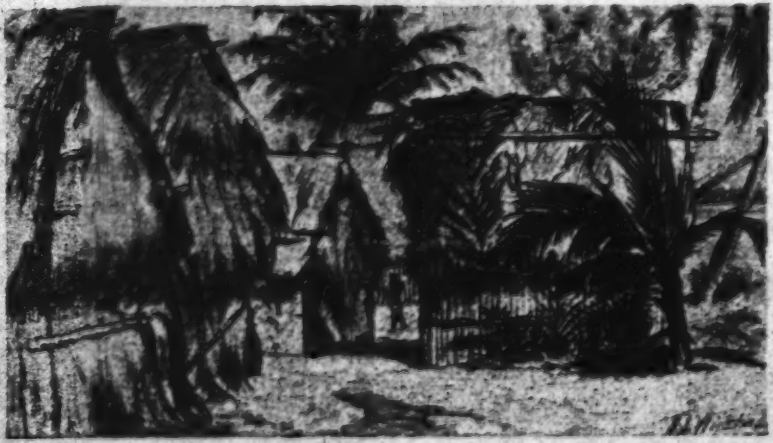

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PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo man. Bottom: Mosquito village, Pearl Lagoon.* (Courtesy American Museum of Natural History.)

[p. 228 -A]

1: Conzemius M-4, 5 (1921) 1932
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a descendant of the Miskito royal family.[8] (Heath, a: 49; Lehmann, b: 715–716; Joyce: 8–9.) The present writer has, however, little faith in its exactitude, and such is also the opinion of the various older Indians he consulted about it.[9]

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Late in the tenth century this country was invaded by a tribe of immigrants from the north (probably the Nicarao) and eventually, after a long struggle, the Miskito were compelled to leave their old home and retreat to the eastern shore of Lake Nicaragua. Here they resided for nearly a century, but finally, again under foreign pressure, this time exercised probably by the Sumu or Matagalpa, they migrated to the Atlantic shore. Believing that they had now found a safe home, they gave themselves the name of *Dis-kitwas-nani*, "they who can not be dislodged," which was corrupted into Miskito.

At the time of their migration to the Atlantic their leader was a sort of culture hero, named *Wakna*, whose son *Lakpatara* "Evening Star" conquered the whole coast from Honduras to Costa Rica. While Wakna was still alive disputes arose among the Miskito chiefs. A rebellion, headed by *Wialandin*,[11] was defeated; its leader was imprisoned, and 300 of his partisans were executed.

PHYSIQUE: PERSONAL CHARACTERISTICS

GENERAL.—The Sumu differ naturally in many points in physique from the Negro-mixed Miskito, but there are also certain slight dissimilarities between them and the pure Miskito or *Tāwira*. The latter are, as a rule, well built and of middle height, whereas the Sumu are rather thickset and low in stature. According to Schultz (67) the Sumu from Rio Prinsapolca measure from 1.427 m. to 1.68 m. with 1.5816 m. as an average.[12]

Both tribes are sturdy, heavy muscled, proportionally broad shouldered, and have deep chests. The arms are well developed in comparison to the legs. As both of these tribes are essentially canoe men, passing most of their time in a cramped position in small boats, they lack the well-developed leg muscles of the "civilized" Indians of the interior.

COLOR.—The Sumu are of fairer complexion than all the other Indian tribes of this part of Central America, not excluding the so-called pure Miskito or Tāwira.

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[8] The father of Mr. Pereira was a Mexican; his mother was the daughter of a Scotchman named Haly and an Indian woman of the Miskito royal family.

[9] Pereira, besides, denies having given out this version, and claims to be in possession of the correct account.

[10] This name has an alluring similarity to Corobici, under which name the early Spanish historians of Central America mention an Indian tribe which lived formerly in northwestern Costa Rica to the south of Lake Nicaragua.

[11] Compare *waila* "enemy" in the Miskito language.

[12] The anthropological measurements by Schultz, quoted in this study, were taken on 12 Sumu from Rio Prinsapolca and 25 Rama from Rama Key, all males.

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SA15 Mosquito SA15

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● 141 CEPHALIC INDEX.—The Sumu are on the average hyperbrachycephalic, that is, they have exceedingly broad heads. The cephalic index, which is obtained by dividing the breadth of the head by its length and multiplying the result by 100, was found to be 89.48 according to Schultz (71–72). This figure is surpassed by few American tribes.[11] It may be the result of artificial deformation, since this practice was formerly current among the Sumu.

[304]

MORPHOLOGICAL FACE INDEX.—The Sumu are on the average mesoprosopic, that is, they have proportionally narrow faces; Schultz (72) found a face index of 84.82 among this tribe living on Rio Prinsapolca, while among the Rama the figure was higher (85.20).

NOSE.—The nose of both Miskito and Sumu is relatively large; the profile is slightly convex among most of pure-blooded Indians. The nasal index is, on the average, very low among the Sumu, the range of variation extending from 66.0 to 83.3, with 73.76 as an average (Schultz: 74). This tribe is therefore mesorrhinic; the Rama, however, have even a narrower nose and are classed as leptorrhinic, the index ranging from 57.6 to 75.9 with an average of 65.96, a rather unusually low figure for American Indians.

EARS.—The Indians of the Mosquito Coast have relatively narrow ears, the physiognomic ear index averaging 54.09 among the Sumu; those of the Rama are still narrower with an average ear index of only 52.64 (Schultz: 75).

142 EYES.—The large brilliant eyes are so dark brown that they appear black to the casual observer. In both Miskito and Sumu they are horizontal, but those of their northern neighbors, the Paya, have a slight Mongoloid tilt.

LIPS AND CHIN.—The lips are full, but not thick, among the Sumu and the pure-blooded Miskito, while the chin is generally "receding"; a prominent chin occurs rarely.

HANDS AND FEET.—The hands are small as compared with Whites and Negroes. In most individuals the annularis is slightly longer than the index finger; the reverse is apparently never the case. The little finger is relatively very small and stands inside of the direction of the ulnar edge of the palm, as if it had been crowded toward the fourth finger. The smallness and position of this finger is not an inherited racial character, but the direct result of the narrow paddle

[11] Boas, quoted by R. Martin (Lehrbuch der Anthropologie, Jena, 1914) found an average cephalic index in Wichita Indians (Oklahoma) of both sexes of 89.5 and one of 89.7 in male California Indians.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

are dying out rapidly, which may account for the lower figure now given. The Rama tribe, of about 200 members, living along the lagoons near Bluefields, has become a sort of slum population; its existence on the edge of the rough seaport village subjects it to the whims and volition of all and sundry. From the Río Tinto northward live the Black Caribs, descendants of the aborigines of St. Vincent Island. In and about Bluefields, Pearl Lagoon, San Juan del Norte, and on the islands, the inhabitants are largely mulattoes; Negroes as well as mulattoes are also found in the coastal towns.

MORPHOLOGICAL CHARACTERISTICS OF MISKITO AND SUMU

The Miskito Indian is generally well built, of middle height whereas the Sumu Indian is rather thickset and of lower stature. Both are proportionally broad shouldered, have beep chests and are heavy muscled. Schultz[31] found the average measure of the adult Sumu and Rama to be 1.5816 m. It is also obvious to any observer that the arm and chest muscles are developed somewhat out of proportion to the leg muscles. This may be due to the fact that these people are essentially canoe (pipante) folk whose chief method of travel consists of river boating. In fact, most of their enterprise is carried out by the use of a boat and the use of arm and torso muscles any exceed those of the lower extremities.

In our studies at Waspam and Saulpuca the weights and heights were noted in a series of individuals with reference to their age. It is apparent that diet plays a role in development[32] but since it will be shown later that the nutrition of these people is adequate in the light of present day criteria, the figures reveal presumably the inherent constitutional morphology of surface area. And since the changes in height and weight vary with the age of the individual it is important to take this factor into account.

It is to be noted that the figures are averages and do not reveal variation. Since the major part of growth occurs between birth and twenty years of age[33] the values given represent the peak of surface area development and the initial phases of further weight gain. However, measurements are no better than their definition and the indivi-

[32] Palmer, C. E. Growth and the economic depression. Pub. Health Reports. 1934, *48*, 1277-1292.

[33] Krogman, W. M. The Growth of Man. Tabulae Biologicae. 1941-42, *20*, 1-967. Junk, Den Haag, Nederlands (delayed in press because of war).

[34] Krogman, W. M. Human Growth. Ciba Symposia. 1943, *5*, 1458-1485.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

dual doing the measuring and much over-emphasis has been placed on this subject.[24] Thus the data are used only as an approximate impression and categorically support clinical observation and conclusions.

Average weight and height of Miskito men and women relative to their age

All years	Sex	152	158	160	165	170	175
			Height (cms)				
			Weight (kilo)				
18-20	M	55.1 (10)*	58 (8)	61 (13)	—	—	64.2 (6)
20-21	M	58.6 (8)	60 (14)	62 (21)	64.6 (6)	65 (6)	64.0 (4)
21-24	M	59.2 (5)	—	61.8 (4)	64.6 (9)	64 (6)	65.0 (4)
25-32	M	66.0 (9)	67 (13)	71.0 (19)	75 (19)	77 (13)	76.0 (2)
18-20	F	60.2 (13)	63 (14)	65.0 (17)	65 (3)	—	—
20-21	F	62.4 (21)	65 (20)	65 (19)	68 (7)	—	—
25-32	F	70.0 (30)	72 (19)	73 (13)	75 (8)	—	—

* Numbers in brackets indicate number of people examined of the same age.

The averages may be further computed for the age groups in question and at 19 years of age may allow for the following comparison:

Comparison of nineteen-year-old subjects
(Height in cms)

Sex	*Present Survey* Miskito Indian	*American* Chicago	*Taken from Krogman*[24] *American* Negro	*German*	*Japanese*
M	162	176	172	174	158
F	160	164	160	165	146

It can be seen from these data the women grow to be about as tall as the men but from the previous table they also tend to become more obese or add more weight than the men. They appear to be generally of shorter statute than those of us who visited the area and this notion is supported by measurements. It must be noted, however, that these people (Waspam, Saulpuca) were upper river folk and cannot be correctly compared with the data obtained by Schultz[25] who studied twelve Sumu Indians from Río Prinsapolca and twenty five Rama Indians from Rama Key. There appears to be, furthermore, slight differences in weight and height within the tribe. These variations are more pronounced in coastal towns, where the socio-economic level is poor by comparison

3: Pijoan D-5 (ca. 1945) 1946
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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[35] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[36]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[35] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk supplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300). II. Ossification of the bones of the wrist (pp. 494-509). III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, *56*.

1: Conzemius M-4, 5 (1921) 1932
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SA15 Mosquito SA15

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[13] Boas, quoted by R. Martin (Lehrbuch der Anthropologie, Jena, 1914) found an average cephalic index in Wichita Indians (Oklahoma) of both sexes of 89.5 and one of 89.7 in male California Indians.

1: Conzemius M-4, 5 (1921) 1932
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handles.[14] These conditions are not yet apparent on the hands of children.

HAIR.—All these Indians have an abundance of hair growth extending very low over the forehead, but it is very scarce on the other parts of the body. The hair is usually black, and very straight and coarse, but occasionally hair with very long low waves may be met with among the pure Indians. Gray and white hair occurs sometimes but not by far as frequently as among the white race. Baldness is practically unknown. Beard growth is very scarce, while chest hair is totally absent among the pure Indians.

LONGEVITY.—There are no reliable figures to be obtained regarding the age of the older Indians. Very few of them seem to have passed their sixtieth or seventieth birthday; still during the years 1917–1922 the writer met a number of Indians who were about 4 to 6 years old at the great eruption of the volcano Cosegüina on the Bay of Fonseca in 1835. This catastrophe, which was accompanied by great earthquakes, is still spoken of by these Indians as the "Great Darkness" (M.: *tihmya-tara;* S.: *puk-sani, puk-barak*);[15] a thick rain of ashes poured over the coast at the time and the sun was as invisible as at night.

DEFORMITIES.—In former days deformed children were not allowed to grow up; they were either buried alive or left to starve. This accounts for the rare cases of deformities encountered among these Indians. Only the strong and healthy being allowed to grow up and produce children, there is little variety of physical and mental development. Even were such a deformed child allowed to grow up, it would not easily find a mate and would die without leaving any children behind. In civilized countries deformities are propagated, as such people will find someone to marry them if they have fortune.

If an Indian has some deformed limb, either brought with it into the world or the result of an accident, he will secrete it as much as possible from the sight of other people, as such is considered a great disgrace. It would be an insult to ask him to show it or to even refer to it.[16] In case of a dispute among Indians one will immediately pick out the weak points in the personal appearance of his adversary.

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[14] See the illustration given by Schultz (69).

[15] The abbreviations for the tribal names used in the present study are the following: M.=Miskito; S.=Sumu; T.=Twahka; P.=Panamaka; U.=Ulwa.

[16] At the Sansan village on Rio Coco the writer knew a Miskito who had lost several fingers on one hand through an accident at the gold mines of Pispis; from that time on he always carried a bandage around the mutilated hand. In the same village a young boy, having lost several toes, was continually wearing a shoe on that foot, although the other foot was always bare.

1: Conzemius M-4, 5 (1921) 1932
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826 heard the peculiar sound produced by two trees rubbing against each other during high wind.

842 STERILITY AND ABORTION.—Sterility is considered a disgrace, and the average husband will abandon his wife if she is unable to bear [847] children. Abortion and prevention of pregnancy are accomplished by the use of certain herbs. In general the Indian woman is very pro- [165] lific, but infant mortality is also very high.

847 INFANTICIDE.—In former days babies of the female sex were often exposed and left to die, as they were supposed to bring ill luck. Male children are always received with great joy, which the father manifests by shooting off his gun. Deformed children were buried alive in olden days, as they were supposed to be possessed by an evil spirit, or to have been begotten by such one. A similar belief is held by many other tribes in both Americas and accounts for the total absence or scarcity of crippled persons in such regions.

847 Twins were also exposed, as they were said to be a proof of the wife's disloyalty to her husband; the latter considered that only one 845 of the two infants could possibly be his. If twins were of different sex the female was always killed. Lehmann (c: I, 405) states among the Miskito the red dog (*pdûan*) is the master of the twins, and that for that reason these Indians whip dogs at the birth of twins (*pdûnki*), but this report needs confirmation.

854 CHILD CARRYING.—The women carry their children in a long cloth which they sling over the back, tying the two ends together in front at the breast. This way the mother is not prevented from following her usual occupation, as both her hands are left free, while the child is firmly secured in a safe and comfortable position. The prevalence [142] of bowlegs among these Indians may possibly be ascribed to this manner of carrying the infants.

855 CARE OF CHILDREN.—The Indian child receives little attention from its parents, yet it rarely cries. The parents have, however, great patience toward their offspring, and they seldom chastise a naughty child. Should they, however, lose their patience and seize the whip, they may administer fearful beatings, but such cases are extremely rare. Lullaby songs are rarely heard, but the parents tell their offspring fables, legends, and fairy tales.

862 The last child is not generally weaned until the fourth year and sometimes even longer. I have observed cases among the Miskito where the young boys alternated their mother's breast with their father's tobacco pipe.

868 EDUCATION.—As the child grows up it is made acquainted with the occupations of its parents. The boy accompanies his father on hunting and fishing journeys as soon as he is strong enough to do so. The father makes toys for him, as diminutive canoes and paddles; later he obtains small bows and arrows in order to practice shooting at birds

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PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

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3: Pijoan D-5 (ca. 1945) 1946
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are dying out rapidly, which may account for the lower figure now given. The Rama tribe, of about 200 members, living along the lagoons near Bluefields, has become a sort of slum population; its existence on the edge of the rough seaport village subjects it to the whims and volition of all and sundry. From the Río Tinto northward live the Black Caribs, descendants of the aborigines of St. Vincent Island. In and about Bluefields, Pearl Lagoon, San Juan del Norte, and on the islands, the inhabitants are largely mulattoes; Negroes as well as mulattoes are also found in the coastal towns.

MORPHOLOGICAL CHARACTERISTICS OF MISKITO AND SUMU

142 The Miskito Indian is generally well built, of middle height whereas the Sumu Indian is rather thickset and of lower stature. Both are proportionally broad shouldered, have beep chests and are heavy muscled. Schultz[24] found the average measure of the adult Sumu and Rama to be 1.5816 m. It is also obvious to any observer that the arm and chest muscles are developed somewhat out of proportion to the leg muscles. This may be due to the fact that these people are essentially [194] canoe (pipante) folk whose chief method of travel consists of river boating. In fact, most of their enterprise is carried out by the use of a boat and the use of arm and torso muscles any exceed those of the lower extremities.

141 In our studies at Waspam and Saulpuca the weights and heights were noted in a series of individuals with reference to their age. It is apparent that diet plays a role in development[32] but since it will be shown later that the nutrition of these people is adequate in the light of present day criteria, the figures reveal presumably the inherent constitutional morphology of surface area. And since the changes in height and weight vary with the age of the individual it is important to take this factor into account.

It is to be noted that the figures are averages and do not reveal variation. Since the major part of growth occurs between birth and twenty years of age[33] the values given represent the peak of surface area development and the initial phases of further weight gain. However, measurements are no better than their definition and the indivi-

[32] Palmer, C. E. Growth and the economic depression. Pub. Health Reports. 1934, 48, 1277-1292.

[33] Krogman, W. M. The Growth of Man. Tabulae Biologicae. 1941-42, *20*, 1-967. Junk, Den Haag, Nederlands (delayed in press because of war).

[34] Krogman, W. M. Human Growth. Ciba Symposia, 1943, *5*, 1456-1485.

3: Pijoan D-5 (ca. 1945) 1946
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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[35] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[26]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[35] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk suplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300). II. Ossification of the bones of the wrist (pp. 494-509). III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, 56.

1: Conzemius M-4, 5 (1921) 1932
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to Punta Gorda for a proposed railway. The naturalist H. A. Wickham lived in Nicaragua (Rio Escondido and Pearl Lagoon) from October, 1867, to June, 1868, in order to collect birds. His ethnographical notes pertaining to the Ulwa are of great interest.

A few years later the French mining engineer, Paul Lévy, traveled on the Mosquito Coast to carry on researches for the Government of Nicaragua. Among the minor contributors to the ethnology of the Mosquito Coast of the nineteenth century are the following: Bovallius, the Swedish zoologist (1881–1883); K. von Girsewald (1892), who spent six months in the gold regions of Pispis; Bruno Mierisch, the government engineer of Nicaragua, who explored the gold regions between Rio Coco and Rio Grande in 1892 and 1893.

In 1900 the celebrated German traveler, Dr. Karl Sapper, who is intimately acquainted with Central America, visited the Miskito and the Sumu living on and about Rio Bocay. The ethnographical specimens collected by him are in the Stuttgart Museum. A collection of ethnographical and archeological material obtained by Doctor Neuhaus around Rio Escondido about this same period is in the Museum für Völkerkunde (Berlin). The German linguist, Walter Lehmann, also investigated these tribes in the course of his voyage to Central America (1907–1909), but unfortunately the ethnographical part of his studies has not yet appeared. The Honduran schoolteacher, Francisco Martínez, also collected interesting ethnological data during his stay at the Sumu village Guampú on Rio Patuca (1916–17). Unfortunately his various contributions have all appeared in local newspapers and reviews of very difficult access.

Finally mention must also be made of the work done by several Moravian missionaries, especially Heath, Grossmann, Reichel, Martin, Ziock, and Siebörger. The books by Schneider and Brindeau are based nearly exclusively upon the investigations of these missionaries.

Since the war the work has been continued by Americans. H. J. Spinden visited Rio Coco and the coast of Nicaragua in 1917–18, and the coast of Honduras in 1923. Dr. A. H. Schultz, of the Johns Hopkins Medical School, carried on some anthropological studies on the Atlantic coast of Nicaragua, examining 25 Rama and 12 Sumu Indians. During the same year (1924) D. E. Harrower, of the Museum of the American Indian, Heye Foundation, was collecting ethnological specimens during two months among the Miskito, Sumu, and Rama.

GENERAL REMARKS ON THE MISKITO

The Miskito are estimated at about 15,000, which number exceeds that of all the other Indian tribes of the Mosquito Coast combined. They are largely mixed with Negroes, for which reason the Spaniards have called them "Zambos," meaning Negro and Indian half-breed, a name which is appropriate.

1: Conzemius M-4, 5 (1921) 1932
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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

1: Conzemius M-4, 5 (1921) 1932
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In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tāwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:

a, *e*, *i*, *o*, *u*, correspond to the sounds of these vowels in German or Spanish.
ai as *ai* in "aisle."
au as *ow* in "how."
oi as *oi* in "boil."
ñ as *ng* in "sing."
x as Spanish *j* or German *ch* in "ach" or Scotch *ch* in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
All the other letters have approximately the same value as in English.

1: Conzemius M-4, 5 (1921) 1932
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Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[7]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (27). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Cassiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[7] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

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144 On the other hand, Santaella Melgarejo, in a report dated Guatemala, April 3, 1715 (Peralta, b: 78–80), states that the vessel in question was English and that it was wrecked in 1652 on the Cajones or Tiburones Keys to the east of Cabo Gracias a Dios. Fearing the Indians from the mainland, the Negroes settled at first at some keys south of the mentioned Cajones (undoubtedly the Mosquito Keys), and once friendly relations were established with the natives, they established themselves at Cabo Gracias a Dios.

Again it is said that the vessel in question was Spanish and bound for Cuba (Raveneau de Lussan: 437–438; Heath, a: 51).

Our source material pertaining to the origin of these slaves is therefore very meager and contradictory. According to a report of Fray Benito Garret y Arlové, dated November 30, 1711 (Peralta, b: 57), one of these Africans, an old man named Juan Ramón, who lived in Granada (Nicaragua) related that about one-third of his countrymen were captured by the Indians and reduced to slavery. The others took to the bush, whence they carried on a crude warfare with the aborigines, who were finally compelled to retreat toward the interior. About 1672 the number of these African slaves held by the Miskito was estimated at about 200; in those days they had already adopted the language and customs of the Indians (Exquemelin, Fr. ed.: II, 276–277).

As a result of the above, the Miskito from Cabo Gracias a Dios to Sandy Bay had already a large admixture of African blood toward the end of the seventeenth century. In the course of time refugee slaves from the English settlements and more recent immigration of Negroes and Mulattoes (chiefly from the West Indies) have contributed to the spreading of the African type, so that to-day Negro characteristics may be observed in almost every village. One of the subtribes of the Miskito, the *Tāwira* who live a short distance inland, from Sandy Bay to Wawa River, however, have refused to mingle their blood with that of the Africans. It is only in recent years that they have begun to intermarry with the mixed Miskito, especially with newcomers from Rio Coco, so that soon a Miskito of pure Indian blood will be a thing of the past.

197 We do not know to what extent these African slaves have influenced the original language of the Miskito, for such researches would entail exhaustive comparative studies with the surrounding Indian languages (Sumu, Paya, Rama), with the Creole dialects of the West Indies, and the languages of the Guinea Coast. The vowel scale is exactly the same as in the Jamaican Creole dialect; several of the peculiar phrases of everyday life are found literally translated into English in Jamaica (Heath, a: 51).

173 We are also indebted to Mr. Heath for a Miskito migration legend which is said to have been given out as authentic by Eduardo Pereira,

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pendence from Spain and the English authorities from Jamaica renewed their friendly relations with the Indians. In fact, one of the chiefs from the area was crowned with solemnity by the British at Belize, British Honduras, and made king, thus reestablishing a British protectorate system. The "Mosquito" (Miskito) Kingdom in those days included the whole Atlantic Coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, a coastline of 700 miles.[7] However, in 1847 the territory became restricted to the territory between Cabo Honduras and Río San Juan, the jurisdiction of which was under British colonials. During these years under British supervision Orland W. Roberts,[8] an active trader on the eastern coast of Nicaragua, gave an accurate account of Miskito Indian customs. Reports were also given by Young,[9] Fröebel,[10] the most important being the text by Bell,[11] who lived in the territory from 1846 to 1862. From 1863 to 1868 John Collinson, a civil engineer, made two voyages to this coast and left an account of his travels.[12] H. A. Wickham,[13] (1867-1868) made a collection of birds from Río Escondido and Pearl Lagoon; P. Levy made researches for the Nicaraguan government[14] and other studies were made by the Swedish zoologist Bovallius,[15] and by K. Von Girsewald, [16] B. Mierisch,[17] and K. Sapper, who obtained a series of ethnographical specimens for the Stuttgart Museum.[18]

Inasmuch as there is a considerable admixture of Negro with the Miskito Indians it may be well to examine the possible reason for this

[8] Roberts, Orlando W. Narrative of Voyages and Excursions on the East Coast and in the Interior of Central America. Edinburgh, 1827.

[9] Young, Thomas. Narrative of a Residence on the Mosquito Shore, During the Years 1839, 1840 and 1841. London, 1895.

[10] Fröebel, Julius. Aus Amerika. Erfahrungen, Reisen and Studien. 2 vols. Leipzig, 1857-1858.

[11] Bell, Charles Napier. Remarks on the Mosquito Territory; its Climate, People, Productions, etc. Journal of the Royal Geographical Society, 1862, *32*, 242-268. London.

[12] Collinson, John. The Indians of the Mosquito Territory. Memoirs of the Anthropological Society of London. 1870, *3*, 148-156. London.

[13] Wickham, H. A. Notes of a Journey among the Woolwa and Moskito Indians. Proceedings of the Royal Geographical Society. 1869, 13, 58-63. London.

[14] Levy, Paul. Notas geográficas y económicas sobre la República de Nicaragua. Paris, 1873.

[15] Bovallius, Carl. Resiai Central-Amerika (1881-1883) Upsala, 1887.

[16] Girsewald, K. Von. Sechs Monate in Nicaragua. Braunschweig, 1896.

[17] Mierisch, B. Eine Reise nach den Goldgebieten in Osten von Nicaragua. Petermanns Mitteilungen. 1893, *39*, 25-39. Gotha.

[18] Sapper, K. Reise auf dem Rio Coco (Nordlickes Nicaragua). Globus, 1900, 78, 249-252, 271-276, Braunschweig; Proceedings of the Nineteenth International Congress of Americanists, 1917, 206-210.

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144 175 In 1875 at the time when the relationship of Miskito and Sumu languages was still unknown, Zúñiga Echenique[19] considered the Miskito Indians as the offspring of fugitive slaves with *Twahka* women (see appendix A). Of the existing Sumu tribes today the *Bawihka* is the [197] one wich linguistically and ethnologically is the closest to Miskito. The *Bawihka* formerly occupied the area of the coastline where the first Europeans made contact. The fact that Echenique had suggested that the Miskito were derived from slaves and Indians and the fact that the *Bawihka* were on the coast induced Conzemius[1] to deduce that intermarriage between Negroes and Indians, an ordinary occurence today, was a possibility in earlier times.

In 1641 a slave ship was wrecked off Cabo Gracias a Dios. The Africans were on a ship commanded by Lourenço Gramalxo.[20] While on the high seas the Negroes revolted and mastered the ship and not knowing navigation allowed the vessel to be carried by trade winds, where it became wrecked on the Mosquito keys. The Negroes reached the mainland and were made slaves by the Indians. However, they were allowed to inter-marry and their children became free members of the tribe. There appears to be some controversy as to the owner of the vessel and the year it foundered.[21 y 22]

As a result the Miskito from Cabo Gracias a Dios to Sandy Bay developed an admixture of African blood. This Mixture was enhanced by the coming of other refugee slaves and the more recent immigrations of Negroes and mulattoes from the West Indies. The extent to which [197] the Indian language was influenced by the African newcomers is unknown; the vowel scale of many people in certain villages is the same as the Jamaican creole dialect. [23 y 24].

000 In recent times important contributions with regard to the Miskito

[19] Zúñiga Echenique, Melquisidec. Descripción geográfica del departamento de la Mosquitia, practicada en el año de 1875. Madrid, 1905.

[20] Vide: Peralta, M. M. Costa Rica y la Costa de Mosquitos. Madrid-Paris, 1898; footnote Nº 3; Edwards, B. The History, Civil and Commercial, of the British West Indies, 5 vols. London, 1819. Heath, G. R., quoted by Conzemius (footnote 1), loc. cit. p. 17.

[21] De Kalb, Courtenay, Nicaragua: Studies on the Mosquito Shore in 1892. Jour. Amer. Geographical Soc. of New York. 1893, *25*, 236-288. versus opinion expressed by Peralta (footnote 20).

[22] Lehmann, W. Ergebnisse einer Forschungsreise in Mittelamerika und Mexico. Zeitschrift fur Ethnologie, 1910, *42*, 687-749.

[23] Conzemius, E. Notes on the Miskito and Sumu Languages of Eastern Nicaragua and Honduras. Internat. Jour. Amer. Linguistics, 1929, *5*, 57-115.

[24] Heath, G. R. Notes on Miskito Grammar and on other Indian languages of Eastern Nicaragua. Amer. Anthropologist. 1913, *15*, 48-62.

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362 ralization can be directly applied to diets in the tropics: the galaxy of
177 nutritional factors are determined by the local situation and the food habits of the people.

164 The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

101 The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called [144] Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the 101 western region of the Mosquito coast was occupied by the Matagalpa 197 Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

101 The Miskito and small isolated bands of Suma Indians inhabit
361 the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive ad- [146] ditional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

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The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little Englsih or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two set seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

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The solution of ethnological problems by the helminthological approach is not without its difficulties and as such is beyond the scope of this report. On the basis of Sandground's data the prevailing hookworm infection among pure blooded Indians should be *Ancylostoma duodenale* but where Negroes have settled and intermingled the infestation becomes dominantly *Necator americanus*. In the Coco Basis, where hookworms were introduced primarily by negroes, the infestation, as far as our obeservations permitted, was that of *N. americanus*.

It is of interest to note that onchocerciasis was not found in the Coco Basin even though the writer thought he had found two patients with this disease. The biopsy material was poorly prepared and there was some question as to the identity of the filarial worms. That the diagnosis was probably erroneous was further strengthened by the fact that *Simulium* flies transmitting this disease were not seen. However, the limited observations in searching for the fly were by no means thorough and do not exclude the possibility of their existence or that of the disease. It may be that in years to come when commerce between natives is increased the appearance of onchocerciasis may become an obvious clinical finding.

Cases of Schistosomiasis have been reported from Panama, Costa Rica and Yucatán but none have been reported from Guatemala[70] nor were we able to find any in Central Nicaragua. Even though *S. mansoni* and *S. hematobium* are of Ethiopian origin, the appearance of negroes in the Coco Basin did not introduce the disease and this fact is ascribed to the absence of the species of snails suitable for the larval development of the parasite.

The commonest worm infestations in the Indians of the Coco Basin were *Ascaris lumbricoides* and *Trichuris trichiura*. The former was common in communities which do not possess sanitary facilities and is contracted by ingesting eggs that are expelled in the feces. The latter, "whip worms", whose eggs are able to withstand adverse environmental conditions, almost to the same extent as those of Ascaris, was commoner than the former and the "pinworm" *Enterobius vermicularis* was frequently found. *T. saginata* and *T. solium* have been noted by others in the area studied but were not observed by us.

[70] Sandground, J. H. Helminthic infections in Guatemala in a Medical Survey of Guatemala. Carnegie Institution of Washington, 1938.

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121 be concluded that there exists no specific tissue alteration which alone may be considered pathognomonic of a single deficiency state: the deficiency must be characterised by all of the clinical signs and symptoms proven to result from a nutritional defect.

● 146 In regard to the Miskito Indians no cases of vitamin deficiency were observed, either by the use of the unproven criteria advocated by Kruse[81] or by the strict clinical evaluation of the subject. Marasmus and malnutrition were observed in infants suffering from diarrhoea, dysentery, or who were abandoned and deprived of food. But other than this finding, little can be said in favor of malnutrition. This becomes obvious in view of the foods these people consume: fruits in season and meats would militate against malnutrition. The people are generally robust and well built regardless of their food habits and while they eat only when hungry, without regularity, it must be admitted that such a method cannot be nutritionally unsound. At Waspook where large quantities of meat and vegetables are consumed the year round, eye lesions often ascribed to ariboflavinosis were commn but the local trader would generally assure a cure by selling dark glasses. The eye conditions were most bothersome during the dry seasons and less so during the rainy season.

The brief study of the dietary habits show that the protein intake from animal food is high, that from legumes relatively low. It has been estimated that the Miskito Indian consumes from 150 to 300 gms. daily of protein, 150 gms. of fat and 200 gms. of carbohydrate; these figures vary somewhat but in general the relationship is about the same. Thus the caloric intake is from 2000-3000 calories daily. These are, of course, average figures determined over a period of time, since the Indian often goes withouh a significant food intake for periods of several days to a week. Except for the fact that the diet of the children may be somewhat low in calcium, there appears to be no dietary deficiencies among these people.

Some of the commonly consumed foods were analyzed and the results are as follows:

[81] Kruse, H. D. Handbook of Nutrition: medical evaluation of nutrional status. Jour. Amer. Med. Assoc. 1943, 20, 584.

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CERTAIN SPECIFIC NUTRITIONAL FACTORS IN COMMON FOODS 146
(Per 100 Grams portion)

	Salt Na Cl. gms.	*Calcium* gms.	*Iron* gms.	*Thiamine* mg.	*Niacin* mg.	*Ascorbic Acid* mg.
Fish:						
Snook	.301	.016	.0016	.06	3.16	
Bass	.202	.028	.0020	.07	2.10	
Monkey	.112	.010	.0028	.092	4.98	
Parrot	.114	.014	.0020	.09	4.36	
Beef	.120	.017	.0032	.062	5.83	
Coconuts	.192	.020	.0014	.02	.42	
Bananas	.131	.006	Trace	.04	.30	7.0
Avocado	.018	.016	.0010	.05	.80	18.0
Oranges	.009	.024	Trace	.06	.16	52.0
Lemons	.005	.023	Trace	.01	.08	72.0
Grapefruits	?	.020	Trace	.03	.10	64.0
Cheese (semicottage)	?	.164	.002	.04	.08	

The intakes of salt average between 1-2 gms. daily; iron between 7-14 mg.; calcium from 0.4-0.9 gms.; thiamin from 0.5-1.0 mg., and niacin from 10-20 mg. During January, February, March and April, the ascorbic acid consumption is low, approximately 10-15 mg. a day. From May to July there is a slight increase of about 5 mg. more in the dietary, while from August to December the intakes will be from 150-300 mg. daily due to the high consumption of citrus fruits, the high intake during this period affords sufficient protection of health during the subsequent period under a maintenance regime.

Clinical findings as regards nutrition. Anemia is the most prevalent finding among children of the Coco River Basin, and what is amazing is the way children tolerate rather drastic reductions in hemoglobin content. Admittedly, altitude is no problem in this region so that at least there is no demand for an increased oxygen capacity of the blood. On the other hand it is impossible to differentiate, clinically, between children having a blood hemoglobin content of 8.0 gms., and those with 13.0 gms. per 100 gms. of whole blood. Furthermore, if the anemia is improved by the use of iron salts the parents may or may not note a difference in the child's behaviour, clinically the difference cannot be detected except in rare instances. In the more severe anemias children complain of lassitude, fatigue, restlessness and lack of energy.

The primary cause of anemia is the type of diet used in early infancy. The child is placed at the breast as soon after birth as possible and is fed whenever it cries. Irregularity in feeding seems to be of no bother to the parents. However, during teething the mother automatically reduces the number of times a day a child is placed at breast since teeth

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146 853 irritate the nipple and causes discomfort to the mother. It is at this point that considerable supplementary feeding is introduced. It is of interest to note that the teeth begin to make their appearance at about the fourth to fifth month in contrast to the average of six to seven months in the United States. The fact that iron reserves are exhausted at about the third month and that supplemental feeding occurs shortly thereafter is a curious coincidence favoring the child.

[827] The Indians believe that food consumed by the mother produces milk and for this reason the mothers eat often and large quantities of food. The children are fed bananas early in life and even if the iron intake from milk supplemented with bananas amounts to 4 mg. a day, it is insufficient to adequately overcome physiological hemoglobin depletion. Theoretically this would soon be made up by foods rich in iron. This in fact is what is attempted by the natives themselves but the anemia is not generally overcome because just as soon as the children begin crawling outdoors form infestation occurs and a relative anemia may be maintained.

146 For practical field use, hemoglobin determinations were carried out using the Sahli equipment and 100 per cent hemoglobin was computed to indicate 15.6 gm. per cent hemoglobin in blood. For purposes of comparison between hemoglobin levels in Guatemala, Yucatán[52] and the Coco territory of Nicaragua, the averages represented:

Guatemalans (691 cases, Shattuck)	73.3 per cent
Yucatecans (2037 cases, Saunders)	71.9 per cent
(1261 cases, Shattuck)	70.6 per cent
Coco River (100 infants, Pijoán)	55.0 per cent

It is admitted that the method of hemoglobin estimation varied, i, e., Shattuck used the Tellquist method, whereas the Sahli method was used in the Coco study. Regardless of this fact, there was less altitude in the Coco Basin to provoke hemoglobin increases and secondly the incidence of insidious disease seemed greater.

Hemoglobin values in 100 infants (2-3 months old) in Zapuca and Waspam, Coco Basin, Nicaragua.

Number of Infants	*Hemoglobin value*
29	60-70 per cent
48	50-60 per cent
23	40-50 per cent

Another point of difference between this study and the others is that the findings by Shattuck was fairly representative of his territory

[52] Shattuck, G. C. A Medical Survey of Guatemala. Carnegie Institution of Washington. 1938.

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in regards to age groups whereas this one concerned itself with infants where anemia was to be expected. Furthermore Shattuck was able to exclude malaria as a cause of anemia.

Blood smears were examined and the significant findings were a slight achromia and variation in size and shape of the red cells, and microcytosis characteristic of chronic hypochromic microcytic anemia commonly associated with iron deficiency in the body.[51] So far then in infants and early childhood the prevalent deficiency is an iron lack which was found to be so not necessarily on clinical evidence but on laboratory investigation. .

Hypochromic anemia. The relatively low iron content of milk (1.8-2.3 mg. 1 liter Fe) [53] accounts for the presence of anemia in early infancy and subsequently a diet, early in life, not rich in iron may not overcome the depleted iron reserves. To this is added the anemia sustained by the effects of infection and intestinal parasitism. Since the more severe anemias occur in those subjects with hookworm disease an iron balance study was undertaken.

Balance study of four subjects with Necator Americanus infestation: Since the demonstration by Stiles,[54] Harris, [55] and others, that hookworm infestation in the United States in associated with anemia, the relationship of cause and effect the syndrome has received attention

Recently Rhoads, Castle, Payne and Lawson[56] have advanced the view that the anemia resulting from hookworm infestation is due to blood loss through the bowel. This is based on the fact that the worms with their hooks cause minute hemorrhages in the bowel wall, but they have stated as have other observers[57], [58] that although there is a slow hemapoietic response to iron therapy during infestation a dramatic response to treatment occurs only when it is administered after the removal of the worms. The assumption that this is a blood loss anemia

[53] Peterson, W. H., and Elvehjen, C. A. The Iron Content of Plant and Animal Foods. Jour. Nutrition, 1931, *4*, 419.

[54] Stiles, C. W. Report upon the prevalence and geographic distribution of hookworm disease. U. S. Govt. Print. Off., U. S. Public Health Service Hyg. Lab. Bull., 1903, *10*.

[55] Harris, H. F. Ankylostomiasis, the most common of the serious diseases of the southern part of the United States. Amer. Med. 1902, *4*, 776.

[56] Rhoads, C. P., Castle, W. B., Payne, J. C., and Lawson, H. A. Observations on the etiology and treatment of anemia associated with hookworm infection in Puerto Rico. Medicine, 1934, *13*, 317.

[57] Rotter, W. Ueber die histologischen Veränderungen des Dunndarms bei Ankylostomiasis. Virchows Arch. of path. Anat. 1931, *280*, 587.

[58] Rhoads, C. P., and Castle, W. B. Observations on the etiology and treatment of the anemia of hookworm disease in Porto Rico. Jour. Clin. Invest. 1932, *11*, 809.

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is based on the blood picture, bone marrow examination and on the fact that the effect of iron therapy was moderate until after the removal of the worms. The fact that live extract exerted no particular effect was interpreted by Rhoads and his associates to support their view.

The assumption that blood loss is the cause hookworm anemia is a good one since it is obvious that the worm draws through its gastro-intestinal tract a fairly copious amount of blood. In fact, much of the blood may pass through the worm in an unused condition. On the other hand it is of interest to note that the degree of anemia and the number of worms present in an individual cannot be correlated.[59], [60] Actually it has been found that a small number of parasites can cause a profound anemia. Whipple,[61] furthermore, has found weak hemolytic factors in hookworms which has suggested the chronic effects of a hemolysin.

The morphological characteristics of the blood cells in hookworm anemia are not those found in hemolytic jaundice. There is besides this consideration the report of De Langen[62] which expresses the view that hookworms secrete a substance toxic to bone marrow. It may be that a variety of factors aside from blood loss exist which are responsible for the anemia. So far no one has attempted to determine iron utilization in subjects with hookworm infestation, a feat which today could be studied to advantage with radio active iron. Our studies, however, were carried out using the classical method of iron balance in which certain errors may occur.

The iron balance was performed in four subjects with hookworm infestation. The procedure used was that described by Farrar[63] and the iron assays of food and feces were performed by the method of Pijoan and Elkin.[31] The only hematological inquiry was the hemoglobin determination in order to ascertain the response to various intakes of iron. The subjects were boys, two of them of 8 years of age, one of 10 years and another of 12 years. As far as could be ascertained all

[59] Smillie, W. G. Studies on Hookworm infection in Brazil. Rockefeller Inst. Monograph, 1922, *17*, 46.

[60] Rosenblum, M. B., and Malkowa, M. N. Zur Charakteristik der Anaemia bei Anchylostoma duodenale. Folia Haematol., 1928, *37*, 197.

[61] Whipple, G. H. The presence of a weak hemoglobin in the hookworm and its relation to the anemia of Uncinariasis. J. Expl. Med., 1909, *11*, 331.

[62] De Langen, C. D. Contributions to the toxic origin of the Anaemia and other symptoms with Ankylostomiasis. Trns. 5th Biennial for East. Assn. Trop. Med. London, 1924.

[63] Farrar, G. E. Jr. The determination of iron in biological material. Jour. Biol. Chem., 1935, *110*, 683.

3: Pijoan D-5 (ca. 1945) 1946
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of them had untreated hookworm infestation of some duration. There was no method at our disposal to accurately determine the degree of infestation. The diet consisted chiefly of milk, bread, cheese, avocado, banan, vitamins and eventually ferrous sulfate supplements. The results are expressed in the following tables.

SUBJECT I

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	7.31	7.40	— 0.09	7.4 gms.	None
2	7.42	7.40	— 0.02		None
3	7.21	7.40	— 0.19		None
4	7.46	7.50	— 0.04	7.38 gms.	None
5	7.33	7.31	+ 0.02		None
6	7.37	(*)			
7	7.56	7.49	+ 0.04		Trace
8	8.22	8.31	— 0.09		Trace
9	8.41	8.39	+ 0.02		None
10	8.30	8.30	———		
11	8.60	8.75	— 0.15		Trace
12	8.75	8.62	+ 0.13		None
13	8.80	(*)			
14	8.20	8.31	— 0.11	7.38 gms.	None
15	8.36	8.30	+ 0.06		None
16	8.41	8.46	— 0.05	7.36 gms.	

Total Balance in 16 days — 0.51

* Specimens lost.

SUBJECT II

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	11.13	11.15	———		
2	11.20	11.21	— 0.01	6.0 gms.	None
3	10.40	10.38	+ 0.02		Trace
4	10.81	10.58	+ 0.23		None
5	9.68	9.72	— 0.14		None
6	10.41	10.46	— 0.05	5.8 gms.	Trace
7	10.28	10.30	— 0.02		None
8	9.34	9.36	— 0.02		Trace
9	9.82	9.79	+ 0.03		None
10	10.56	10.58	— 0.02		None
11	10.62	10.62	———		Trace

12	10.84	10.83	+ 0.01	6.0 gms.	Trace
13	11.36	11.36	———		None
14	11.42	11.43	— 0.01		None
15	11.41	11.42	— 0.01		None
16	13.64	13.63	+ 0.01	6.12 gms.	None

Total Output Equals Intake Neg. Balance.

SUBJECT III

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	18.75	18.76	— 0.01	5.16 gms.	None
2	22.41	21.06	+ 0.35		None
3	19.35	19.37	— 0.02		Trace
4	20.36	20.36	———		None
5	21.10	21.08	+ 0.02		None
6	20.34	20.36	— 0.02		Trace
7	22.10	22.09	+ 0.01		None
8	21.15	20.15	———		None
9	18.98	18.96	+ 0.02		None
10	19.26	19.25	+ 0.01		None
11	19.34	19.34	———		None
12	19.71	20.74	— 0.03	5.80 gms.	Trace
13	19.24	19.23	+ 0.01		None
14	19.49	19.47	+ 0.02		None
15	20.10	20.10	———		None
16	20.18	20.17	+ 0.01	6.0 gms.	None

Total Balance 0.38 mg.
0.0237 mg. per day

SUBJECT IV

Supplemental Iron Given (given 75 mg. $FeSO_4$ = 27.5 mg. Fe)

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	36.41	36.38	0.03	7.12 gms.	No
2	37.42	37.39	0.03		tests
3	36.30	36.28	0.02		done
4	38.40	38.31	0.09	7.40 gms.	because
5	44.76	43.57	1.19		of
6	45.71	44.65	1.06		high
7	44.84	43.78	1.06	8.0 gms.	iron
8	44.73	43.66	1.07		intake

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9	45.12	43.11	2.01	
10	43.19	42.13	1.06	9.0 gms.
11	39.38	39.30	0.08	
12	38.40	38.31	0.09	
13	37.41	37.32	0.09	10.5 gms.
14	36.64	36.59	0.05	
15	38.52	38.45	0.07	11.5 gms.

Total Intake 9.11 mg. or 0.57 mg. Fe daily.

Since the amount of iron in urine is negligible and would indicate if anything in favor of negative balance no urinary excretion iron assays were performed. It is obvious from our study that a positive but slight (0.0237 mg.) balance is shown when the consumption of iron is in the neighborhood of 18 mg. iron intake a day, but it is known that during early life iron requirements are considerable and the drains upon the iron stores will then be the greatest. Exhaustion of iron stores takes place during the first year of life when the total blood volume is tripled and the total hemoglobin doubled.[54] A low iron intake at this time will bring about a depletion of the iron reserve. At the age when Necator infestation manifests itself the hemoglobin stores are often low or exhausted. It has been calculated by Heath and Patek that the average annual requirement of a 10 year hold child is about 0.152 grams or 0.04 mg. per day of absorbed iron (derived from a positive balance). It is obvious therefore that the iron utilization of 0.0237 mg. per day is quite insufficient, especially when the body stores are depleted. Thus, in Necator infestation more iron is required, and the administration of supplemental iron (75 mg. $FeSO_4 = 27.5$ Mg. Fe) brings about a positive balance where 0.57 mg. Fe are apparently absorbed daily. From subfindings it seems clear that the anemia of hookworm requires treatment with large doses of iron and it has been the clinical experience of others[56] that improvement takes place only with large doses of iron ammonium citrate and ferrous sulfate. On the other hand the hemoglobin increases 1/2 per cent per day if the worms are first removed.[56] These data presented here lead us to conclude that the explanation of anemia based entirely on blood loss from the bowel is an unsatisfactory one. Even though it may contribute to the anemia of Necator infestation, some other mechanism must play a role in sustaining the anemia. Whether the worms secrete a toxin which affects the hemopoietic system or a substance which forms unassimilable iron salts is a matter of conjecture and requires further inquiry. It has been noted that about fifty per cent of subjects with hookworm infes-

[54] Heath, C. W., and Patek, A. J., Jr. Anemia of iron deficiency. Medicine, 1937, *16*, 267.

3: Pijoan D-5 (ca. 1945) 1946
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tation have chronic diarrhoea, some have glossitis,[65] occasionally leucopenia and lymphocytosis is observed. Reticulocyte counts usually were under 3 per cent and studies on platelets show them to be within normal limits. These findings indicate some unusual process in Necator hypochromic anemia.

Our own assays of the worms themselves reveal an iron content of only 1-2 mg. Fe per kilogram. It seems unlikely therefore that iron consumption by the worm plays a rôle in the anemia.

WORM INFESTATIONS

Because the writer is not a helminthologist the classification of intestinal parasites is not a complete one and depended considerably on the aid given him by laboratory assistants. However, certain aspects of the subject are intriguing. Sandground[66] has pointed out that the data dealing with intestinal parasites can be collated in such a way as to throw light on the racial origins of some of the Indians and to bear witness to the invasion of Central American countries by alien races. Von Thering according to Sandground had demonstrated the value of testimony from the world of parasitism as an aid to zoogeography and paleozoology. For instance, in recognizing the close affinities between the tapeworms harbored by marsupials in South America and Australia, Zschokke[67] presented evidence of a phylogenetic relationship in their hosts. Metcalf[68] also demonstrated by studies on opalinid ciliates in Amphibia a genetic relationship between frogs of South America and Australia and brought out new facts which tended to corroborate hypotheses in geography dealing with land masses connecting now isolated continents. Using information on the history of certain infectious diseases, and their prevalence in certain races, Williams[69] used the host-parasite association as a means of studying racial relationships among American Indians.

[65] Ashford, B. K., King, W. W., and Gutiérrez, P. Report of the study and treatment of "anemia" in Porto Rico. Bur. Print. and Supplies, San Juan, 1904.

[66] Sandground, J. H. Consideration of relation of host specificity of helminths and other metazoan parasites to phenomena of age resistance and acquired immunity. Parasitology, 1929, *21*, 227-255.

[67] Zschokke, F. Die Darmcestoden der Amerikanischen Beuteltiere. Centralbl. f. Bakteriol. 1904. *36*, 51-62.

[68] Metcalf, M. M. Bull. 120, U. S. Nat. Mus. 1923: Smithsonian Misc. Coll. 1929, *81*, No. 18.

[69] Williams, H. U. The epidemic of the Indian of New England, with remarks on Native American Infections. Johns Hopkins Hosp. Bull. 1909, *20*, 340-349; 1616-1620.

1: Conzemius M-4, 5 (1921) 1932
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recent times this arm has also spread to the Sumu. The Indians use muzzle-loading shotguns, called *raks* or *rakbus* by the Miskito and *arakbus* or *arakbas* by the Sumu. These names are evidently of European origin and are taken from the English "harquebus" or the French "arquebuse," or perhaps the Spanish "arcabuz." Powder is known by its English name (*powtar*), but shot, which is generally kept in the small *pispis* bottle gourd (*Lagenaria lagenaria*), is spoken of by the Indians as the "eggs of the shotgun" (M.: *raks mabra;* S.: *arakbus suma*). Double-barreled guns (M.: *raks sutki;* S.: *arakbus sutki*, that is, "twin guns") are also occasionally met with.

THE CHASE

SKILL IN HUNTING.—Game is very abundant in this sparsely inhabited part of Central America. The Indian is an excellent hunter; the keenness of his senses is marvelous and nothing escapes his eyes. Every sound is noticed and understood, and the distance and the direction whence any noise proceeds is estimated with surprising accuracy. The Indian has a marvelous instinct which permits him to discover with great ease the footprints of animals and then determine the species to which they belong. He pursues the game through the thicket with the sagacity of the bloodhound.

A MALE OCCUPATION.—The wife never accompanies her husband on the actual hunt, where she would be in his way, for she does not learn to handle any arms. When a number of men organize a hunting party, expected to last more than a day, they may be accompanied by the members of their family. Arrived at a place said to be rich in game, they erect temporary sheds, wherefrom they undertake smaller expeditions in different directions. The hunters start out early in the morning, and before nightfall they rejoin the women and children, who have been left behind at the provisional ranch. The best time for hunting is in the morning before 9 o'clock and in the evening after

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Camock, a member of that Puritan colony, appears to have founded a settlement at Cabo Gracias a Dios. Having gained the confidence of the Indians, the son of one of their most important chiefs was taken to England, where he remained two years, a certain Colonel Morris remaining as hostage among the Indians. Some of these Indians went occasionally to Providencia, where they learned English and were instructed in the Christian religion (Sloan, a: pp. LXXVI-LXXVII; Bridges: II, 138–139). In 1641 this Puritan colony, which by that time had found it more profitable to take up privateering than to pursue the peaceable occupation of farming, was stamped out by a Spanish expedition; the settlers then left for other regions, chiefly to the Bahama Islands.

According to Exquemelin (French edit.: II, 277), who wrote in 1678, the first buccaneers, a French vessel, anchored at Cabo Gracias a Dios 60 years previously—that is, about 1618—and entered into friendly relations with the Indians; the buccaneers would seem, therefore, to have been the first Europeans with whom the Miskito became friendly.

1: Conzemius M-4, 5 (1921) 1932
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BETROTHAL AND TRIAL MARRIAGE.—The children are sometimes engaged by their respective parents while still in early infancy, even at the age of 5 or 6 years. The young boy makes his fiancée and her parents a small present, and helps them occasionally in their work. When she arrives at the age of puberty (about 10 years) he takes her as his wife. The man is considered a member of his wife's family and he goes to live in the house of his parents-in-law. When the family enlarges he will build a house of his own near by. Perhaps a misunderstanding of the above facts has led M. W. (309) to state that a system of trial marriage existed in those days among the Miskito. According to this author the probationary period lasted about two years, at the end of which a feast was prepared and then the union was considered legitimate, there being no ceremony. To-day the young man marries generally at the age of from 16 to 18, the girl at about 12.

WEDDING.—Exquemelin (Engl. edit.: 253; French edit.: II, 267–268) gives the following account of the marriage ceremony of the Miskito during the latter part of the seventeenth century. The father, after assuring himself that the lover was an expert hunter and fisher, ordered his daughter to bring a calabash of a beverage prepared from pineapples and honey; the suitor drank one-half of the contents and then tendered the remainder to his future wife to drink. According to this same author the buccaneers had the habit of buying a Miskito woman for a knife, ax, or hatchet, upon their arrival at Cabo Gracias a Dios. She was obliged to remain with him during the time he stayed at the settlement and to supply him with the products of the plantation, while he went out hunting and fishing. (Exquemelin, Engl. edit.: 249).

Among the Sumu the nuptial ceremony is performed by an elderly man who first gives the couple a long talk. Then the two aspirants join the thumb of the right hand, whereupon he separates their hands by cutting through with his own hand. There is no record of the chiefs having possessed the *jus primæ noctis* as appears to have been the case with the Chorotega (Orotiña) of the Pacific coast of Nicaragua and Costa Rica. Marriage with other tribes was not permitted in former days by the Sumu, and the children of strangers were killed. This accounts for the fact that the Sumu have kept themselves free from foreign admixtures, whereas the Miskito intermarry with all races and absorb everything. The Sumu are very jealous of their wives and until recent times did not allow them to converse with strangers.

MOTHER-IN-LAW TABOO.—As soon as the marriage ceremony has taken place the young Sumu husband must not speak any more to his mother-in-law, nor even look at her. When he is at home she remains in her own apartment, which is separated from the remainder

1: Conzemius M-4, 5 (1921) 1932
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These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wáikna pâin;* S.: *al yamni, al yamka*).

All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

1: Conzemius M-4, 5 (1921) 1932
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hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yañ*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

1: Conzemius M-4, 5 (1921) 1932
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175 to Punta Gorda for a proposed railway. The naturalist H. A. Wick-
114 ham lived in Nicaragua (Rio Escondido and Pearl Lagoon) from October, 1867, to June, 1868, in order to collect birds. His ethnographical notes pertaining to the Ulwa are of great interest.

A few years later the French mining engineer, Paul Lévy, traveled on the Mosquito Coast to carry on researches for the Government of Nicaragua. Among the minor contributors to the ethnology of the Mosquito Coast of the nineteenth century are the following: Bovallius, the Swedish zoologist (1881–1883); K. von Girsewald (1892), who spent six months in the gold regions of Pispis; Bruno Mierisch, the government engineer of Nicaragua, who explored the gold regions between Rio Coco and Rio Grande in 1892 and 1893.

In 1900 the celebrated German traveler, Dr. Karl Sapper, who is intimately acquainted with Central America, visited the Miskito and the Sumu living on and about Rio Bocay. The ethnographical specimens collected by him are in the Stuttgart Museum. A collection of ethnographical and archeological material obtained by Doctor Neuhaus around Rio Escondido about this same period is in the Museum für Völkerkunde (Berlin). The German linguist, Walter Lehmann, also investigated these tribes in the course of his voyage to Central America (1907–1909), but unfortunately the ethnographical part of his studies has not yet appeared. The Honduran schoolteacher, Francisco Martínez, also collected interesting ethnological data during his stay at the Sumu village Guampú on Rio Patuca (1916–17). Unfortunately his various contributions have all appeared in local newspapers and reviews of very difficult access.

Finally mention must also be made of the work done by several Moravian missionaries, especially Heath, Grossmann, Reichel, Martin, Ziock, and Sieborger. The books by Schneider and Brindeau are based nearly exclusively upon the investigations of these missionaries.

Since the war the work has been continued by Americans. H. J. Spinden visited Rio Coco and the coast of Nicaragua in 1917–18, and the coast of Honduras in 1923. Dr. A. H. Schultz, of the Johns Hopkins Medical School, carried on some anthropological studies on the Atlantic coast of Nicaragua, examining 25 Rama and 12 Sumu Indians. During the same year (1924) D. E. Harrower, of the Museum of the American Indian, Heye Foundation, was collecting ethnological specimens during two months among the Miskito, Sumu, and Rama.

GENERAL REMARKS ON THE MISKITO

161 The Miskito are estimated at about 15,000, which number exceeds
144 that of all the other Indian tribes of the Mosquito Coast combined. They are largely mixed with Negroes, for which reason the Spaniards have called them "Zambos," meaning Negro and Indian half-breed, a name which is appropriate.

1: Conzemius M-4, 5 (1921) 1932
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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

1: Conzemius M-4, 5 (1921) 1932
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In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tōwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:
a, e, i, o, u, correspond to the sounds of these vowels in German or Spanish.
ai as *ai* in "aisle."
au as *ou* in "how."
oi as *oi* in "boil."
ŋ as *ng* in "sing."
x as Spanish *j* or German *ch* in "ach" or Scotch *ch* in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
All the other letters have approximately the same value as in English.

3: Pijoan D-5 (ca. 1945) 1946

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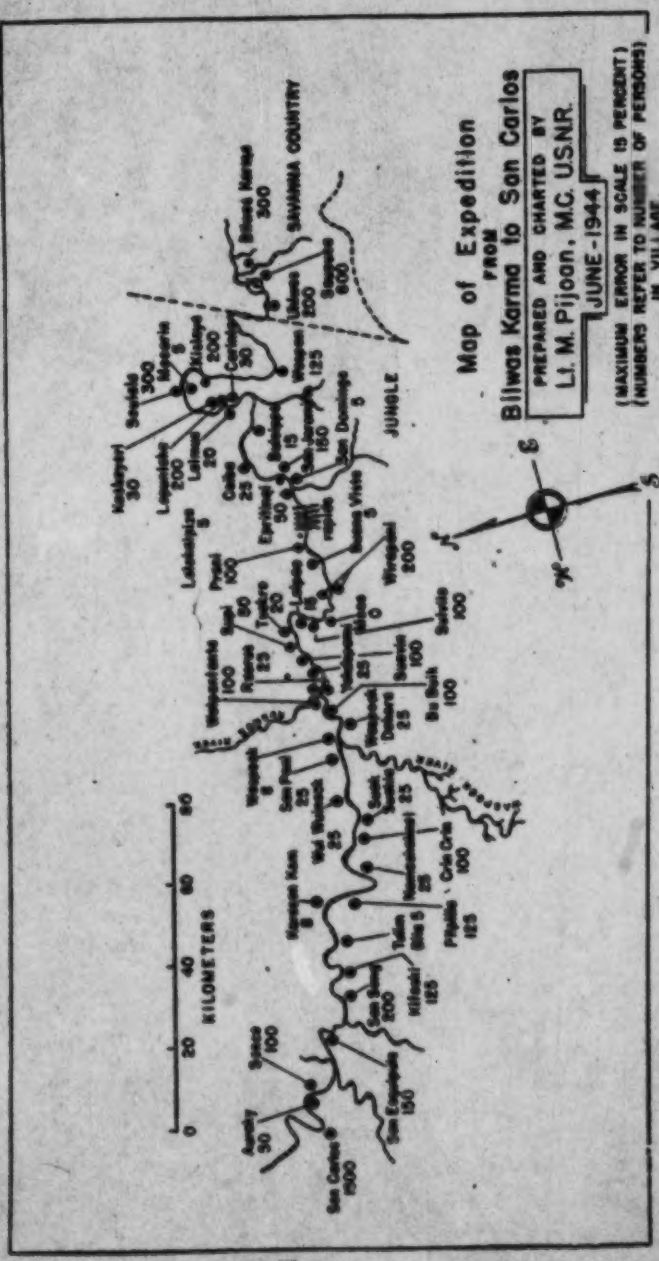

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3: Pijoan D-5 (ca. 1945) 1946

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The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Cariba, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two wet seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the sea-shore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

1: Conzemius M-4, 5 (1921) 1932
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526 staff play. The object of the game is to see which can keep up longest the continual strain upon the muscles of the arm, and ultimately strike the staff from the hand of the other."

HYGIENE: DISEASES AND THEIR CURE

515 Most of the Indians keep themselves very clean and take a bath twice a day in the river adjoining their settlement. As they wear but little clothes this is a very simple operation with them; they keep their body cleaner than do the lower class of the Ladinos, or of the white race in Europe, where the clothes are frequently the main source of dirtiness.

514 When the Indian goes to stool he always takes to the water, drifting down the river until he comes to a secluded spot, where he can perform this operation in privacy. When finished he cleanses the body with water.

515 The presence of dogs and pigs in the huts is responsible for the great quantity of fleas to be found there. In spite of the great care devoted to the hair, the latter is frequently full of vermin, and it is not an uncommon occurrence to see at the villages rows of women picking off one another's lice and crushing the troublesome insects between the teeth—a most disgusting sight.

● 164 MALARIA.—A swelling of the spleen and anemia are common enough and are undoubtedly the result of malaria (M.: *wrih;* T.: *ware, warai;* P., U.: *yama, yamah*),[44] which is endemic in the lowlands, although rarely fatal. The transmitting agent of malaria is a mosquito of the genus *Anopheles*, which is very common.

751 For malarial fevers infusions from the bark of certain trees are administered, especially that of the copalchí (*Cinchona* sp.). Instead of sudorific bush medicine, quinine is also administered nowadays. The fever or lemon grass (*Andropogon nardus* L.) is also used for this purpose. The sudorific is followed by a steam bath. The stricken person is enveloped in tunu blankets, and water is thrown on some large heated stones placed at his feet; he then inhales the thick vapor or fumes produced thereby. This part of the treatment is excellent, for it induces perspiration; but as the patient is then taken to the riverside and forced to take a cold bath pneumonia is often the result.

Among the Sumu the patient is carried to one of the numerous hot springs (*daka*) which abound in their territory, and immersed therein, or he is buried up to the armpit in the hot sand at the edge of the pool.

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[44] These names were formerly used by both Miskito and Sumu as a general term for most other maladies, but nowadays the Miskito have adopted the word siknis (Engl. "sickness") in the latter sense.

1: Conzemius M-4, 5 (1921) 1932
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SKIN INFECTIONS.—Cutaneous infections are very common in certain regions, a fact already recorded by Exquemelin (French ed.: II, 277), who visited the Miskito of Cabo Gracias a Dios; they are the result of ignorance of the most elementary principles of hygiene.

A certain skin disease, which starts by a burning or swelling of flesh, is said to be caused by the urine of an insect, which, like the disease itself, is called *mustukra* by the Miskito.

A specific ulcer, resembling cancer, and known locally by the name "bay-sore" (M.: *lasa krûisa* "the devil is boring"; S.: *pilau, tamak*), is sometimes caught by Indians and Negroes. It breaks out on face, arms, and legs, and is generally attended with very acute pain. It is cured by powerful caustics, or applications of a corrosive nature. The common ulcer, abscess, or carbuncle is called *yukri* (M.) and *suru* (S.).

Various other bad skin diseases may be found in certain regions; they are known by various names (M.: *yats, kliñkliñ, kuswa-dûya;* S.: *una*).

A cutaneous affection, sometimes taken for leprosy (which is rarely met with), is very common among both tribes. It is known by the names *bulpis* among the Miskito and *mara* among the Sumu; the Spanish-speaking Central Americans call it "bienteveo," "carate," and "mal del pinto." It occurs in white, red, and black blotches; for that reason the Ladinos refer derisively as *gente pintada* "painted people" to the ones afflicted with this disease.

Ringworm (M.: *sus, sihiri, bulpis twaknira;* S.: *mara pdû, mara titis*) is also met with among the Indians. Small warts (M.: *sisrama;* S.: *titismak*) also occur on the hands.

Painful sores may also be caused by the jiggers or chigoes (*Sarcopsylla penetrans*), a sort of flea, which is very common during the dry season but disappears gradually at the beginning of the rainy period. This insect lives on the ground and is especially common around the dwellings where pigs are allowed to roam. It burrows itself under the skin and toenails of man and animal to deposit its eggs. If the latter be taken out immediately with a disinfected needle or the point of a knife, the wound will heal without further care.

Minute ticks cover every bush during the dry season. They fix themselves to the body of man and animal and bury their head in the skin. Sometimes they cause painful inflammations.

YUMU, OR STOMACH ACHE.—This state of ill being is very common among the Miskito and appears to be merely some sort of indigestion due to overeating. The Indians believe that it is caused by the spirit of an animal which has entered the body of the sick person. This may have taken place by eating a piece of the animal in question, or by being scared at the sudden appearance thereof, while being out in the bush. Thus if the agouti (kyaki) has caused the ill the latter

1: Conzemius M-4, 5 (1921) 1932
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will be known as *kyaki yumu-ka*. The Sumu have apparently taken this belief from the Miskito, and they have no distinctive name for the ill; the Rama of Nicaragua call it *yakuki*.

The sukya cures this illness after its source has been revealed to him in dreams, for the treatment differs slightly according to various animals which have caused it. But in all cases the belly of the patient is strongly massaged with animal grease (also vaseline, coconut oil), while the sukya keeps on continually a low whistle in order to induce the spirit to depart. Among the Christianized Miskito there are also some people who heal *yumu* by similar methods; they are known as *yumu yabaka uplika* "people curing yumu."[84]

Women *enciente* may occasionally suffer from *kwihra yumu-ka* "pregnancy yumu"; the child is supposed to die then invariably, unless the sukya applies a treatment.

OTHER INDIGENOUS DISEASES.—Dysentery (M.: *taldura;* S.: *ba-pau*) occasionally appears in the form of an epidemic; it is generally cured by the administration of an infusion from the bark of the nance tree (*Byrsonima crassifolia* H. B. K.).

To cure diarrhea (M.: *byara plapaya;* T., P.: *ba lanin;* U.: *bawas lanaka*), the favorite remedy is an infusion prepared by boiling the bark of the mountain guava tree or the seed of the zapote or monkey apple. The Sumu also boil the rootstock (M.: *labu;* S.: *sara*) of the black or Ulwa banana.

According to the investigations carried on by the Rockefeller Foundation, hookworm is found on about 75 per cent of the Indian population living around Matagalpa. There is no doubt that it is also common among the Indians of the Mosquito Coast. Hookworm is seldom fatal, but there is progressive anemia and frequently interference with mental and physical development, causing occasionally premature death.

Children especially seem to be infected with intestinal parasites, as may be seen from their color and their enormously swollen belly; this is largely due to their habit of eating earth, charcoal, and the like.

Rheumatism (M.: *kyaia lâiwaya, dusa lâiwaya;* S.: *wakal dalanin, wakal dalanaka*) is supposed to be caused by thorns or fishbones which have been introduced into the flesh by evil spirits. The sukya pinches and kneads the afflicted spot, then makes a small incision with a glass splinter and, applying his mouth to the wound, he sucks a little and finally produces a prickle or bone, which he had carefully hidden between his teeth.

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[84] Ziock (162) gives *yumuk* as the Miskito name for a native doctor curing with medicines. In the Carib dialects of Surinam and adjacent regions *yumu* is the name for some sort of spirit.

[i.e. yumu, or stomachache, see cat. no. PA119-20 – Analyst]

1: Conzemius M-4, 5 (1921) 1932
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Wickham (b: 160–161; c: 205) states that the Ulwa used to cure pains in the limbs by flogging the aching part with a kind of nettle, until the skin became raised in bumps.

A disease of the eyes, perhaps trachoma, called *ūkri bāikan* by the Miskito, is prevalent; it does not produce total blindness, but causes great pain. Foreigners appear to be immune to it.

Venereal diseases, as syphilis (M.: *mārmanka;* S.: *pildū*) and gonorrhea (M., S.: *iskadora*), are only met with in the larger villages at the coast. Anthropologists and the medical world seem, however, to agree now that syphilis is of American origin.

Yellow fever likewise is undoubtedly of New World origin, and was formerly endemic in certain parts of the Central American lowlands. In the sparsely populated country under consideration, however, no authentic case of yellow fever has been recorded. Perhaps the transmitting agent, a species of mosquito (*Stegomyia fasciata* syn. *Aëdes* sp.), is absent. Black water fever is also unknown. Leucorrhea is, however, very common. Indians suffer seldom from hemorrhoids (M.: *slabla dāiwaya;* S.: *sarani putulnin, saraka putulnaka*), which swelling is prevalent among whites residing in the country.

FOREIGN DISEASES.—Europeans have introduced among the Indians a number of distressing maladies formerly unknown to them, and against which they had not the slightest immunity. Although strong and robust, the Indians are especially subject to infections by the germs of diseases generated by large communities.

Epidemics of our common catarrh (M.: *syahka;* T., P.: *ohdana;* U.: *nattuk isanaka*) have occasionally caused great havoc among the Indians of the interior.

Whooping cough (M.: *ikya;* S.: *duk*) appears occasionally as an epidemic among children, whereby many of them die.

Influenza or grippe also occurs periodically as an epidemic. It seems to have been brought to the country for the first time in 1807–08 by some Miskito returning from the logwood and mahogany camps of British Honduras. Consumption is also found sometimes, especially among the Sumu.

Measles and smallpox were brought to the New World by the first conquistadores and facilitated the subjugation of the Indians. Epidemics of measles (known by the Spanish name "*sarampion*") are responsible for many deaths; this disease was already observed at Cabo Gracias a Dios among the Miskito during the latter half of the seventeenth century (Exquemelin, French ed.: II, 277). Smallpox has on different occasions decimated entire villages, but since the middle of the nineteenth century has not appeared on the Mosquito Coast. Wickham (b: 204–208) gives an account of the last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

3: Pijoan D-5 (ca. 1945) 1946
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ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the western region of the Mosquito coast was occupied by the Matagalpa Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

The Miskito and small isolated bands of Suma Indians inhabit the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive additional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

3: Pijoan D-5 (ca. 1945) 1946
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in regards to age groups whereas this one concerned itself with infants where anemia was to be expected. Furthermore Shattuck was able to exclude malaria as a cause of anemia. 146

Blood smears were examined and the significant findings were a slight achromia and variation in size and shape of the red cells, and microcytosis characteristic of chronic hypochromic microcytic anemia commonly associated with iron deficiency in the body.[51] So far then in infants and early childhood the prevalent deficiency is an iron lack which was found to be so not necessarily on clinical evidence but on laboratory investigation.

Hypochromic anemia. The relatively low iron content of milk (1.8-2.3 mg. 1 liter Fe) [52] accounts for the presence of anemia in early infancy and subsequently a diet, early in life, not rich in iron may not overcome the depleted iron reserves. To this is added the anemia sustained by the effects of infection and intestinal parasitism. Since the more severe anemias occur in those subjects with hookworm disease an iron balance study was undertaken. 146 164

Balance study of four subjects with Necator Americanus infestation: Since the demonstration by Stiles,[54] Harris, [55] and others, that hookworm infestation in the United States in associated with anemia, the relationship of cause and effect the syndrome has received attention

Recently Rhoads, Castle, Payne and Lawson[56] have advanced the view that the anemia resulting from hookworm infestation is due to blood loss through the bowel. This is based on the fact that the worms with their hooks cause minute hemorrhages in the bowel wall, but they have stated as have other observers[57], [58] that although there is a slow hemapoietic response to iron therapy during infestation a dramatic response to treatment occurs only when it is administered after the removal of the worms. The assumption that this is a blood loss anemia

[53] Peterson, W. H., and Elvehjen, C. A. The Iron Content of Plant and Animal Foods. Jour. Nutrition, 1931, *4*, 419.

[54] Stiles, C. W. Report upon the prevalence and geographic distribution of hookworm disease. U. S. Govt. Print. Off., U. S. Public Health Service Hyg. Lab. Bull., 1903, *10*.

[55] Harris, H. F. Ankylostomiasis, the most common of the serious diseases of the southern part of the United States. Amer. Med. 1902, *4*, 776.

[56] Rhoads, C. P., Castle, W. B., Payne, J. C., and Lawson, H. A. Observations on the etiology and treatment of anemia associated with hookworm infection in Puerto Rico. Medicine, 1934, *13*, 317.

[57] Rotter, W. Ueber die histologischen Veränderungen des Dunndarms bei Ankylostomiasis. Virchows Arch. of path. Anat. 1931, *280*, 587.

[58] Rhoads, C. P., and Castle, W. B. Observations on the etiology and treatment of the anemia of hookworm disease in Porto Rico. Jour. Clin. Invest. 1932, *11*, 909.

3: Pijoan D-5 (ca. 1945) 1946
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is based on the blood picture, bone marrow examination and on the fact that the effect of iron therapy was moderate until after the removal of the worms. The fact that live extract exerted no particular effect was interpreted by Rhoads and his associates to support their view.

The assumption that blood loss is the cause hookworm anemia is a good one since it is obvious that the worm draws through its gastro-intestinal tract a fairly copious amount of blood. In fact, much of the blood may pass through the worm in an unused condition. On the other hand it is of interest to note that the degree of anemia and the number of worms present in an individual cannot be correlated.[59], [60] Actually it has been found that a small number of parasites can cause a profound anemia. Whipple,[61] furthermore, has found weak hemolytic factors in hookworms which has suggested the chronic effects of a hemolysin.

The morphological characteristics of the blood cells in hookworm anemia are not those found in hemolytic jaundice. There is besides this consideration the report of De Langen[62] which expresses the view that hookworms secrete a substance toxic to bone marrow. It may be that a variety of factors aside from blood loss exist which are responsible for the anemia. So far no one has attempted to determine iron utilization in subjects with hookworm infestation, a feat which today could be studied to advantage with radio active iron. Our studies, however, were carried out using the classical method of iron balance in which certain errors may occur.

The iron balance was performed in four subjects with hookworm infestation. The procedure used was that described by Farrar[63] and the iron assays of food and feces were performed by the method of Pijoan and Elkin.[31] The only hematological inquiry was the hemoglobin determination in order to ascertain the response to various intakes of iron. The subjects were boys, two of them of 8 years of age, one of 10 years and another of 12 years. As far as could be ascertained all

[59] Smillie, W. G. Studies on Hookworm infection in Brazil. Rockefeller Inst. Monograph, 1922, *17*, 46.

[60] Rosenblum, M. B., and Malkowa, M. N. Zur Charakteristik der Anaemia bei Anchylostoma duodenale. Folia Haematol., 1928, *37*, 197.

[61] Whipple, G. H. The presence of a weak hemoglobin in the hookworm and its relation to the anemia of Uncinariasis. J. Expl. Med., 1909, *11*, 331.

[62] De Langen, C. D. Contributions to the toxic origin of the Anaemia and other symptoms with Ankylostomiasis. Trns. 5th Biennial for East. Assn. Trop. Med. London, 1924.

[63] Farrar, G. E. Jr. The determination of iron in biological material. Jour, Biol. Chem., 1935, *110*, 683.

3: Pijoan D-5 (ca. 1945) 1946
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of them had untreated hookworm infestation of some duration. There was no method at our disposal to accurately determine the degree of infestation. The diet consisted chiefly of milk, bread, cheese, avocado, banan, vitamins and eventually ferrous sulfate supplements. The results are expressed in the following tables.

SUBJECT I

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	7.31	7.40	— 0.09	7.4 gms.	None
2	7.42	7.40	— 0.02		None
3	7.21	7.40	— 0.19		None
4	7.46	7.50	— 0.04	7.38 gms.	None
5	7.33	7.31	+ 0.02		None
6	7.37	(*)			
7	7.56	7.49	+ 0.04		Trace
8	8.22	8.31	— 0.09		Trace
9	8.41	8.39	+ 0.02		None
10	8.30	8.30	———		
11	8.60	8.75	— 0.15		Trace
12	8.75	8.62	+ 0.13		None
13	8.80	(*)			
14	8.20	8.31	— 0.11	7.38 gms.	None
15	8.36	8.30	+ 0.06		None
16	8.41	8.46	— 0.05	7.36 gms.	

Total Balance in 16 days — 0.51

* Specimens lost.

SUBJECT II

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	11.15	11.15	———		
2	11.20	11.21	— 0.01	6.0 gms.	None
3	10.40	10.38	+ 0.02		Trace
4	10.81	10.58	+ 0.23		None
5	9.68	9.72	— 0.14		None
6	10.41	10.46	— 0.05	5.8 gms.	Trace
7	10.28	10.30	— 0.02		None
8	9.34	9.36	— 0.02		Trace
9	9.82	9.79	+ 0.03		None
10	10.56	10.58	— 0.02		None
11	10.62	10.62	———		Trace

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12	10.84	10.83	+ 0.01	6.0 gms.	Trace
13	11.36	11.36	——		None
14	11.42	11.43	— 0.01		None
15	11.41	11.42	— 0.01		None
16	13.64	13.63	+ 0.01	6.12 gms.	None

Total Output Equals Intake Neg. Balance.

SUBJECT III

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	18.75	18.76	— 0.01	5.16 gms.	None
2	22.41	21.06	+ 0.35		None
3	19.35	19.37	— 0.02		Trace
4	20.36	20.36	——		None
5	21.10	21.08	+ 0.02		None
6	20.34	20.36	— 0.02		Trace
7	22.10	22.09	+ 0.01		None
8	21.15	20.15	——		None
9	18.98	18.96	+ 0.02		None
10	19.26	19.25	+ 0.01		None
11	19.34	19.34	——		None
12	19.71	20.74	— 0.03	5.80 gms.	Trace
13	19.24	19.23	+ 0.01		None
14	19.49	19.47	+ 0.02		None
15	20.10	20.10	——		None
16	20.18	20.17	+ 0.01	6.0 gms.	None

Total Balance 0.38 mg.
0.0237 mg. per day

SUBJECT IV

Supplemental Iron Given (given 75 mg. $FeSO_4$ = 27.5 mg. Fe)

	Intake mg.	*Feces Fe Output* mg.	*Balance* mg.	*Hbg.* %	*Occult Blood in Stools*
1	36.41	36.38	0.03	7.12 gms.	No
2	37.42	37.39	0.03		tests
3	36.30	36.28	0.02		done
4	38.40	38.31	0.09	7.40 gms.	because
5	44.76	43.57	1.19		of
6	45.71	44.65	1.06		high
7	44.84	43.78	1.06	8.0 gms.	iron
8	44.73	43.66	1.07		intake

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9	45.12	43.11	2.01	
10	43.19	42.13	1.06	9.0 gms.
11	39.38	39.30	0.08	
12	38.40	38.31	0.09	
13	37.41	37.32	0.09	10.5 gms.
14	36.64	36.59	0.05	
15	38.52	38.45	0.07	11.5 gms.

Total Intake 9.11 mg. or 0.57 mg. Fe daily.

Since the amount of iron in urine is negligible and would indicate if anything in favor of negative balance no urinary excretion iron assays were performed. It is obvious from our study that a positive but slight (0.0237 mg.) balance is shown when the consumption of iron is in the neighborhood of 18 mg. iron intake a day, but it is known that during early life iron requirements are considerable and the drains upon the iron stores will then be the greatest. Exhaustion of iron stores takes place during the first year of life when the total blood volume is tripled and the total hemoglobin doubled.[64] A low iron intake at this time will bring about a depletion of the iron reserve. At the age when Necator infestation manifests itself the hemoglobin stores are often low or exhausted. It has been calculated by Heath and Patek that the average annual requirement of a 10 year hold child is about 0.152 grams or 0.04 mg. per day of absorbed iron (derived from a positive balance). It is obvious therefore that the iron utilization of 0.0237 mg. per day is quite insufficient, especially when the body stores are depleted. Thus, in Necator infestation more iron is required, and the administration of supplemental iron (75 mg. $FeSO_4 = 27.5$ Mg. Fe) brings about a positive balance where 0.57 mg. Fe are apparently absorbed daily. From subfindings it seems clear that the anemia of hookworm requires treatment with large doses of iron and it has been the clinical experience of others[66] that improvement takes place only with large doses of iron ammonium citrate and ferrous sulfate. On the other hand the hemoglobin increases 1/2 per cent per day if the worms are first removed.[66] These data presented here lead us to conclude that the explanation of anemia based entirely on blood loss from the bowel is an unsatisfactory one. Even though it may contribute to the anemia of Necator infestation, some other mechanism must play a role in sustaining the anemia. Whether the worms secrete a toxin which affects the hemopoietic system or a substance which forms unassimilable iron salts is a matter of conjecture and requires further inquiry. It has been noted that about fifty per cent of subjects with hookworm infes-

[64] Heath, C. W., and Patek, A. J., Jr. Anemia of iron deficiency. Medicine, 1937, *16*, 267.

3: Pijoan D-5 (ca. 1945) 1946
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146 tation have chronic diarrhoea, some have glossitis,[65] occasionally leu-
164 copenia and lymphocytosis is observed. Reticulocyte counts usually were under 3 per cent and studies on platelets show them to be within normal limits. These findings indicate some unusual process in Necator hypochromic anemia.

Our own assays of the worms themselves reveal an iron content of only 1-2 mg. Fe per kilogram. It seems unlikely therefore that iron consumption by the worm plays a rôle in the anemia.

WORM INFESTATIONS

164 Because the writer is not a helminthologist the classification of
114 intestinal parasites is not a complete one and depended considerably on the aid given him by laboratory assistants. However, certain aspects of the subject are intriguing. Sandground[66] has pointed out that the data dealing with intestinal parasites can be collated in such a way as to throw light on the racial origins of some of the Indians and to bear witness to the invasion of Central American countries by alien races. Von Thering according to Sandground had demonstrated the value of testimony from the world of parasitism as an aid to zoogeography and paleozoology. For instance, in recognizing the close affinities between the tapeworms harbored by marsupials in South America and Australia, Zschokke[67] presented evidence of a phylogenetic relationship in their hosts. Metcalf[68] also demonstrated by studies on opalinid ciliates in Amphibia a genetic relationship between frogs of South America and Australia and brought out new facts which tended to corroborate hypotheses in geography dealing with land masses connecting now isolated continents. Using information on the history of certain infectious diseases, and their prevalence in certain races, Williams[69] used the host-parasite association as a means of studying racial relationships among American Indians.

[65] Ashford, B. K., King, W. W., and Gutiérrez, P. Report of the study and treatment of "anemia" in Porto Rico. Bur. Print. and Supplies, San Juan, 1904.

[66] Sandground, J. H. Consideration of relation of host specificity of helminths and other metazoan parasites to phenomena of age resistance and acquired immunity. Parasitology, 1929, *21*, 227-255.

[67] Zschokke, F. Die Darmcestoden der Amerikanischen Beuteltiere. Centralbl. f. Bakteriol. 1904, *36*, 51-62.

[68] Metcalf, M. M. Bull. 120, U. S. Nat. Mus. 1923: Smithsonian Misc. Coll. 1929, *81*, No. 18.

[69] Williams, H. U. The epidemic of the Indian of New England, with remarks on Native American Infections. Johns Hopkins Hosp. Bull. 1909, *20*, 340-349; 1616-1620.

3: Pijoan D-5 (ca. 1945) 1946
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The solution of ethnological problems by the helminthological approach is not without its difficulties and as such is beyond the scope of this report. On the basis of Sandground's data the prevailing hookworm infection among pure blooded Indians should be *Ancylostoma duodenale* but where Negroes have settled and intermingled the infestation becomes dominantly *Necator americanus*. In the Coco Basis, where hookworms were introduced primarily by negroes, the infestation, as far as our observations permitted, was that of *N. americanus*.

It is of interest to note that onchocerciasis was not found in the Coco Basin even though the writer thought he had found two patients with this disease. The biopsy material was poorly prepared and there was some question as to the identity of the filarial worms. That the diagnosis was probably erroneous was further strengthened by the fact that *Simulium* flies transmitting this disease were not seen. However, the limited observations in searching for the fly were by no means thorough and do not exclude the possibility of their existence or that of the disease. It may be that in years to come when commerce between natives is increased the appearance of onchocerciasis may become an obvious clinical finding.

Cases of Schistosomiasis have been reported from Panama, Costa Rica and Yucatán but none have been reported from Guatemala[70] nor were we able to find any in Central Nicaragua. Even though *S. mansoni* and *S. hematobium* are of Ethiopian origin, the appearance of negroes in the Coco Basin did not introduce the disease and this fact is ascribed to the absence of the species of snails suitable for the larval development of the parasite.

The commonest worm infestations in the Indians of the Coco Basin were *Ascaris lumbricoides* and *Trichuris trichiura*. The former was common in communities which do not possess sanitary facilities and is contracted by ingesting eggs that are expelled in the feces. The latter, "whip worms", whose eggs are able to withstand adverse environmental conditions, almost to the same extent as those of Ascaris, was commoner than the former and the "pinworm" *Enterobius vermicularis* was frequently found. *T. saginata* and *T. solium* have been noted by others in the area studied but were not observed by us.

[70] Sandground, J. H. Helminthic infections in Guatemala in a Medical Survey of Guatemala. Carnegie Institution of Washington. 1938.

3: Pijoan D-5 (ca. 1945) 1946
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Mixed Worm Infestation in 100 Children From Zapuca and Waspam (Coco Basin)
Nemathelminthes

Age of Child	*Number of Children Infected*			
	Ascaris Lumbricoides	*Enterobius Vermicularis*	*Trichuris Trichiura*	*Necator Americanus*
5—10	56	31	60	10
10—15	21	16	56	13

Trichuris trichiura infestation was common throughout the population. However, as the children become older, and among adults, there was a decreasing incidence of infestations, other than Trichuris, proportionate to the age of the individual. It is presumed that as age increases the subjects are more careful about their habits and the ordinary methods of re-infection are reduced.

757 164 In treating intestinal parasites, the Indians use numerous decoctions made from tree barks. As far as can be ascertained the brews act mainly as cathartics and are not, strictly speaking, vermicidal. The effect of violent catharsis is two-fold. First, there is the psychological effect of direct action of the therapeutic of reducing a swollen abdomen and the consequent relief from distension or constipation, and second, there is a diminution in the quantity of parasites, since many were removed by cathartic action. The Indians, however, prefer our methods for treating intestinal helminths and seek such treatment whenever available.

THE INFECTIOUS DISEASES OF THE COCO BASIN

Yellow Fever

164 Carter's investigations[71] have revealed that yellow fever was a disease brought to the New World from Africa. The first epidemic occurred in Yucatán in 1648. Since then numerous epidemics of yellow fever have been described; the distribution of the disease and dates of occurrence have been listed by Hirsch.[72]

As far as could be determined yellow fever has not been reported from the eastern coast and the interior of Nicaragua. Dr. Thaeler, at Bilwas Karma, has never seen a case in this area and other investigators have suspected it in this region but were unable to discover its presence.

[71] Carter, H. R. Yellow fever: an epidemiological and historical study of its place of origin. 1931. Baltimore.

[72] Hirsch, August. Handbook of geographical and historical pathology. 1883. Vols. I and II. New Sydenham Society, London.

3: Pijoan D-5 (ca. 1945) 1946
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The mosquito, *Aedes aegypti*, the transmitter of the disease, is common in the territory but is apparently uninfected. Even in the listing of Hirsch there is no report of yellow fever in Nicaragua until 1868 and it is possible for geographical reasons that the disease failed to appear in the Coco Basin. According to Raynal[73] several outbreaks of yellow fever occured in nearby Guatemala (San José, 1859; Escuintla, 1868; Retalhuleu, 1881 and 1895), and this would confirm Hirsch's notation of yellow fever in Nicaragua in 1868.

It must be recalled that a high mortality occurs from yellow fever only when the disease appears in a relatively non-immune population or when the disease has been carried to immune territories. It is possible therefore that the disease, if present at one time, could be quiescent in certain areas for a period of years and since small numbers of travellers visit central and eastern Nicaragua, very few, if any, infective people enter the territory. With this in mind it would appear plausible to suppose that the vector insect has not had opportunity for obtaining the virus.

Plague

Although common in Europe during the 16th and 17th centuries, plague did not reach the New World until late in the 19th century, when it appeared for the first time in San Francisco, México, and other scattered territories. Plague is unknown in the Coco Basin and as a result presents no public health problem.

Cholera

The first pandemic of cholera probably started in Indian between 1817 and 1823 but did not reach the New World until between 1826 and 1837.[72] In 1837, according to Bancroft[74] the epidemics of cholera began to make their appearance through Guatemala and in other parts of Central America; in Nicaragua in 1855 it became a serious problem. In 1856 it crippled Mora's army in Nicaragua and continued its course. Walker's army was devastated by it.[74] The disease spread quickly throughout Central America and continued in El Salvador and Guatemala until near the end of 1857. It broke out again in Nicaragua in 1866 and continued in Honduras until 1871. In spite of the poor sanitary conditions today the presence of the disease has apparently

[73] Raynal, J. Annales de médicine et de pharmacie coloniales. 1932, *30*, 59, Paris.

[74] Bancroft, H. H. History of Central America, 1883, 1887, vols. 7 and 8. San Francisco.

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not seriously manifested itself. It apparently has not made its appearance in the Coco Basin and no knowledge of it can be found for the territory.

Smallpox

The exact date of the introduction of smallpox into the New World is not well known. In Mexico, Bernal Díaz[75] states "a negro was in the smallpox: an unfortunate importation for that country for the disease spread with considerable rapidity and the Indians died by the thousands"; this was in 1520. Since then there have been numerous ravages of the smallpox in various portions of Central America, however, there is no apparent history of the disease in the Coco Basin and if it did exist it would have been localized to a great extent to the smaller communities. The great outbreaks of smallpox in Costa Rica in 1862, in Guatemala and Honduras in 1883, was escaped by Nicaragua due to vaccination. Most of the visitors to the Coco Basin had already been vaccinated and this fact alone presumably supports the view that the disease is relatively rare in that territory.

Measles

The exact date of the introduction or recognition of measles in the New World is unknown. Hirsch states that measles was not recognized in Europe as a specific disease before the 18th century. Zinsser[76] on the other hand claims that measles was common among the natives of the New World in 1595 but that it was probably brought to America from the Old World. The disease has been a serious one to the Indians generally throughout Central America but for some particular reason it is fairly rare in the Coco Basin and only a few specific cases have been reported.

Typhus Fever

As far as can be ascertained typhus fever is extremely rare or does not occur among the Miskito Indians of the Coco. The disease apparently is of European origin but for some reason or other infected rats have not been introduced into eastern Nicaragua.

Whooping Cough

Whooping cough was introduced into America from Europe and caused the death of thousands of Indians and is particularly fatal to

[75] Díaz, Bernal. The true history of the Conquest of Mexico. Written in the year 1568. Translated by Maurice Keatinge: 1803. 2 vols. Salem and London.
[76] Zinsser, H. Rats, lice and history: 1935. Boston.

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them.[77] Sporadic epidemics of whooping cough have occurred in the Coco Basin and have always continued with considerable severity. Thousands of deaths from whooping cough were reported to the League of Nations in 1933 and 1934.[78] In the Coco Basin the children in a few villages have come down with this disease but because of the wide gaps between villages it has never spread entirely throughout the area. In short, the epidemics appear to become localized and have within the last 50 years decreased considerably in number. Thus, it can be said that considerable morbidity and mortality for whooping cough does occur at intervals of them but are localized in character.

Diphtheria

Diphtheria appears to be a relatively rare disease in the tropics; for instance, in the non-tropic areas such as Buenos Aires, the incidence per 100,000 persons was in 1929, 16.9; in Quebec, 23, and in Chicago in 1927, 13.8. In the tropic area in 1927 for Havana was 1.5; in 1928, 2.0; Guayaquil in 1930, 0.8; Veracruz in 1930, none; in Kingston in 1927-1929, none. Further north in Tampico the incidence was in 1930, 6.0; and in the Panama Zone in 1928, 9.9. Larsen[79] states that in the tropics diphtheria is a mild, seldom seen disease and rarely assumes epidemic proportions. This is of interest since Emerson[80] has shown that there is a significant difference in the cause and death incidence rates of diphtheria in various racial groups in New York City and he believes that the factor of race is the only one of importance which can be recognized. Be this as it may, the fact remains that today no case of diphtheria has been reported in the Coco Basin territory. This does not mean, however, that mild cases have not occurred since the disease might have been mistaken, if mild, for any of the upper respiratory diseases.

Pneumonia and Bronchial Pneumonia

At the time of our expedition through the Coco Basin we did not hear or not did we see any cases of pneumonia; however, we were in-

[77] Gann, Thomas, In an unknown land. 1924, New York.

[78] League of Nations Health Organization. Annual Epidemiological Reports, Geneva. For the year 1933, published in 1935; for the year 1934, published in 1936.

[79] Larsen, A. E. Variation of cosmopolitan diseases in tropical and temperate zones. Amer. Jour. Trop. Med., 1936, *16*, 91.

[80] Emerson, K. Future of program for tuberculosis control. Amer. Jour. Public Health, 1935, *25*, 707-711.

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164 formed that pneumonia and bronchial pneumonia did exist and that at
171 certain times the disease would occur especially among infants with a very high morbidity and mortality. Pneumonia is however more common in the highland tropics. For instance, in Guatemala, where the incidence is equal to that of México, it is more than double than that for Massachusetts. The disease in the Coco Basin is not of paramount importance nor is it a public health problem. No statistics are available so that a proper description of this disease can not be given.

Tuberculosis

Hrdlicka[81] has said of pulmonary tuberculosis in Indian tribes that "this disease which in all probability is extremely rare, if it exists at all, in the prehistoric Indians, was seldom seen before a century ago (before 1806) and is gradually becoming everywhere more common". His observations indicated further that pulmonary tuberculosis in the Indian is usually fatal within a comparative short time.

But it has been noted[82] for instance in Guatemala that tuberculosis is an important cause of death in the larger cities; it is not prevalent in small communities. The real question, as raised by Shattuck, is does tuberculosis treaten to become a major problem in Central America. If so, little has been done to combat the disease in this area. Yudice[83] applied tuberculin tests to 447 children in El Salvador and found the Pirquet test positive in 47 per cent of the subjects (children 3 to 14 years old), and those in whom it was doubtful or negative gave 21 per cent positive Mantoux tests. In the reports dealing with North American Indians, Crouch[85] found 75 per cent positive among Indians of Montana and Coleman[84] stressed the view that Navajo Indians had practically no immunity to the disease. The factors involved appear to be those of racial susceptibility, poor food, bad hygiene, and the lack of treatment of contributing causes.

164 Although we were not able to secure the incidence of pulmonary tuberculosis among the Miskito Indians, two facts seeemed apparent. *The first of these was that fever, cachexia, hemoptysis symptoms which* developed rapidly and often terminated in death were common in the younger Indians who worked in mines. The other fact is that such

[81] Hrdlicka, Ales. Smithsonian Inst. Bur. Amer. Ethnol. 1909, Bull. 42.
[82] Yudice, Luis. Salv. Med., 217, ab. 1936. (Abstract in Bol. de la Oficina Sanitaria Pan-americana, Sept. 1936, 883.)
[85] Crouch, J. H. U. S. Public Health Reports, 1932, 47, N° 38, 1907.
[84] Coleman, Nancy R. The Reservation Boarding Schools, Bull. 25, (Nov 1936), Natl. Assoc. on Indian Affairs, Inc., New York.

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clinical findings were rare among in Indians living in isolated villages and in those who subsisted on game and agriculture. This observation appeared to be common knowledge. 164

One case of tuberculous pleurisy with effusion was noted in a twenty years old boy and Bilwas and this subject was the only noted by us during the entire journey into the Coco Basin.

Malaria

In considering Central America, in 1881, Hirsch[72] has pointed out "that malarial diseases have their chief seat on the Atlantic (gulf) coast from Chagres up to Cape Gracias a Dios, and on the interior plain up to a height of 600 meters". Even though the disease occurs throughout the lowlands of Central America, there still remains today, the same striking disease problem on the eastern Atlantic areas. In fact, Malaria constitutes the major public health problem of the Miskito Coast.

Historically it is difficult to trace the presence of malaria in the New World prior to the conquest. In 1519, Cortes, Father Olmeda and Diaz had attacks of fever and similar illnesses occurred among some of their soldier[74] but the disease was mild and few deaths were attributable to it. There is no evidence that the military campaigns were handicapped by the fever. Stitt[85] in *Our Disease Inheritance from Slavery* lists tropical malaria (aestivo-autumnal) and black-water fever among the diseases introduced from Africa, and Carter[71] is "inclined to think that malaria did not exist in America prior to its discovery. It would of necessity have been introduced early by the Europeans and Negroes, and, *Anopheles* being generally present, it would have spread." On the other hand Joyeux and Sice[86] in quoting Pozo say that malaria was present in Mexico prior to Columbus.

Malaria, clinically, is protean in character and follows no given set of rules. The contributing factors are many. These are the species of parasites and their biological properties, the severity of infection, the age and race of the patient, his resistance to the disease, the effects of relapse, the kinds and amounts of therapy used and the important aspects of intracurrent, recurrent and terminal infections.[87] The di-

[85] Stitt, E. R. U. S. Naval Med. Bull. 1928, 26, 801-833.

[86] Joyeux, C. and Sice, A. Precis de Medicine Coloniale, 1937, Masson et Cie. Paris.

[87] Cannon, P. R. Some Pathologic aspects of human malaria. Symposium on Human Malaria (Ed.: Moulton) F. R. 1941, American Association for the advancement of Science, Washington.)

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[64] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [757] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[88] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[88] Brumpt. E. Precis de Parasitologie, 4th ed., 1927, Paris.

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Combined results of the malarial survey at Saulpaca (Zapuca) and San Carlos

Age	*Total N° of Persons*	*Spleen examination Positive Splenomegaly*		*Positive Blood smear for parasites*	
Years		*Saulpaca*	*San Carlos*	*Saulpaca*	*San Carlos*
0-1	40	0	11	6	10
2-4	46	2	15	13	17
5-9	128	3	52	46	55
10-14	80	2	34	27	36
15-19	41	2	18	14	20
50-54	34	0	8	8	9

the proximity of Bilwas Karma where certain public health measures have been introduced to expect a decreased incidence of disease. However the problem of clinical malaria remains a challenge and suppressive measures with atabrine or similar drugs may do much for these communities; the use of effective insect control with modern insecticides may play a major role in the future village control of insect borne disease. From the values given in the examination for malaria it is obvious that the disease constitutes the mayor health problem of the area. At Waspam, Bilwas Karma, the following mosquitoes were collected by our party, these were: *Anopheles albimanus, A. albitarsis, A. aquasalis, A. argyritaris, A. parapunctipennis, A. pseudopunctipennis,* (several varieties), *A. vestitipennis, and A. crucians* (reported to be collected by Kumm). *A. albimanus* was found in great numbers and is probably the principal transmitter of malaria. This species is found in humid tropical climates and its breeding places are in the swamps exposed to the sun. However it has been known to exist at altitudes of 1350 meters (Guatemala City) and is the most common vector.

Syphilis

Hrdlicka[89] has pointed out that there is no substantial evidence of precolumbian syphilis. On the other hand Williams and Wakefield, Dellinger and Camp[90] regard the conclusions of their studies as being sufficient to substantiate the view that syphilis was endemic in North America prior to European contacts. Regardless of controversy, sy-

[89] Hrdlicka, A. Disease, medicine and surgery among American aborigines (Geo. M. Kober Lecture). Jour. Amer. Med. Assoc. 1932, 99, 1661.

[90] Wakefield, E. G. Dellinger, S. C. and Camp, J. D., Study of osseous remains of "mound builders" of eastern Arkansas. Amer. Jour. Med. Sciences, 1937, 193, 418.

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phylis, today among Indians, is a disease that deserves further study. Dr. Mitchell Frank[91] has repeatedly stated that many cases with positive serologic evidence do not show clinical manifestations of syphilis nor is there anything which could he construed to indicate syphilis in the history. He points out furthermore that some of these cases on treatment have changes in serological findings but others do not. He has endeavored to perform all of precipitation — flocculation was well as the modifications of the Wasserman reactions and he is not satisfied with the status of this subject among Indians. Lynwalter[92] in 1923, in a study of Pueblo Indians found that 31 per cent had serologic evidence of syphilis and Dr. Frank does not believe that all these subjects were endowed with the disease. Plant[93] in South Dakota found serologic positives in Indians in 10.9 per cent of the men and 7.3 per cent of the women; Clarke[94] in New Mexico showed a serologic case rate of 1.5 for Indian males and 2.3 for Indian females: Dunham, Aberle, Farquhar and D'Amico[95] stated that positive serologic evidence was present in 2 per cent of the Indian children; Mountin and Townsend[96] report on incidence of 6.6 per cent among Indians studies. Pierce[97] has stated that there is something peculiar to the results obtained with precipitation flocculation tests among Indians and that the Wasserman reaction may be involved as well. Other considerations are the changing nature of the disease itself as exists over a period of years within a community and the effects of interracial marriages.

With regard to syphilis in Central Nicaragua, Rosenfeld[90] in his report stated "syphilis too is apparently very prevalent, several cases suggesting congenital and central nervous infections having been observed". It was, however, our impression that syphilis when present existed only in certain communities and rarely in others. Although there was no opportunity to perform routine serological testing, the clinical evidence of the disease was rare in all of the small

91 Frank, Mitchell, Senior Physician, United Pueblos Agency, 1943, personal communication.

92 From the Office of Indian Affairs, Washington, D. C. 1923.

93 Plant, F. Paralysestudien bei Negern u. Indianern. 1926, Berlin.

94 Clarke, W. Sangre impura in Mora: study of syphilis and certain other diseases in population of Mora County, New Mexico. Ann. of Int. Med. 1934, 7, 1936.

95 Dunham, E. C., Aberle, S. D., Farquhar, L. and D'Amico, M. Physical status of 219 Pueblo Indian children. Amer. Jour. Dis. Children, 1937, 53, 739-49.

96 Mountin, J. W., and Townsend, J. G. Treas. Dept. Pub. Health Service Bull. 1936, Bull. 223 (Feb).

97 Pierce, L. F. Personal communication, 1943.

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villages on the Coco River. In and around Waspam, San Carlos, and Bilwas Karma several cases were seen which appeared to have the stigmata of the disease. Dr. Daniel F. Molloy of the Rockefeller Foundation once informed Dr. George Shattuck [52] that yaws in Honduras and in Nicaragua occurred in "nests". It was our impression that the same can be said for syphilis. Several cases were seen in and about Bilwas that were being treated and although the disease does not present itself as a major Public Health problem within the Coco Basin it is important that it be treated since there is every likelihood that it will spread.

Yaws

Yaws is a common disease in the tropic regions of Central America and it is often seen in the subjects of the Coco Basin. There appears to be some evidence that Yaws was an ancient disease in the Americas. Hirsch [72] and Shattuck [52] agree that yaws was an importation from Africa. In a survey of a hundred patients as San Carlos nine of them yaws, three of the subjects were boys between the ages of 10 and 18 who had the typical secondary eruption of yaws. The other six patients had a mixture of annular tertiary lesions and chronic eruptions. Treponema was demonstrated in four of the patients. Although no formal survey was undertaken, Dr. Thaeler and others[98] had the impression that the disease was common in the area. The treatment of the subjects with mapharsen and bismuth salicylate results in a dramatic response, and at the end of the third weekly injection most of the lesions had disappeared. It would appear to us that a definite program could be established with regard to the treatment of yaws wherein a sustained effort in a field project coud accomplish the treatment of the majority of the cases within a short period of time. Thus a team could enter into a territory and make a definite tour with a view of treating yaws. Although the disease would probably not be eliminated by such a measure it would no doubt be suppressed in its spread to a where it might considered a minor public health problem.

Pinta

The disease pinta is characterized by changes in pigmentation as a result of *Treponema Carateum* infection. Is is presumed to be of

[98] Rosenfeld, L. in his survey of March, 1943 found among 200 subjects at Raiti and San Carlos, 26 of them with yaws and 18 of them with Pinta and 2 with both diseases combined.

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pre-columbian origin. The disease was found to occur in 10 per cent of the population examined, some villages having more of the disease than others. Aside from discoloration of the skin no other symptoms could be found and it appeared to have little effect on the body economy of an individual. However, many persons were conscious of the discoloration, felt shy because of it and presumed themselves to be unclean. The disease was common in certain families and not in others though there seems to be no evidence for congenital transmission[99]. So far little or no treatment for the disease has taken place in this area.

Dysentery

If by dysentery we mean infectious diarrhea then this disease is not only prevalent in the tropics but it is associated by high morbidity and mortality. And since it is epidemic in quality it is bacterial in origin.* However it must not be forgotten that dysentery is a loose term denoting mainly a symptom complex. As such the disease can be caused by amoeba, by the ciliate *Balantidium coli*, by malaria (P. falciparum), by certain worms, and by *giardia*. The two most common types of dysentery are bacillary and amoebic and of these two the former is our primary concern.

Bacillary dysentery is common throughout the year in the Coco River basin but has its greatest epidemic quality during the beginning and end of the rainy seasons. The childhood mortality rate from the disease although not exact takes a toll of approximately ten per cent of the children afflicted by it. As far as could de determined with limited equipment the common etiological agent is *Shigella paradysenteriae Flexner*, an organism utilizing glucose, mannite, but not lactose or dulcite.

The disease occurs chiefly in the larger villages; in the smaller villages it may be rare or have never occured. This is of interest from an epidemiological point of view since in some of the isolated small villages the carrier or the source of the organism is not available. In the larger villages, an example of which is San Carlos, the disease may debilitate a third to one half the population. In our opinion, at San Carlos the disease may be traced to certain wretched latrines within the business section of the village. Some of the latrines have been erected at considerable cost; others are make-shift devices for the conveniences of their owners. Regardless of cost the screens because

[99] Mackie, T. T., Hunter, G. W. and Worth, C. B. A. Manual of tropical medicine. Philadelphia, 1945.

* Dysentery bacilli, Salmonella, Staphylococci, etc.

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of rain and humidity have eroded, the pit fills with water and the entire construction fills with flies. The dysentery epidemics at San Carlos usually begin about these latrines and extend to the periphery of the village.

Another contributing factor to the spread of dysentery is that in some areas well meaning visitors have encouraged the use of milk for children. In a territory devoid of refrigeration or adequate sterilization the use of milk should be derived from the mother's breast or directly from the cow's udder. On the other hand milk products such as cheese are less likely to be infected. Nevertheless, milk fluid serves as an excellent bacterial medium. Powdered milk might obviate such a hazard.

Drinking water in the larger villages may be considered a source of infection since water may be stored in containers not ideally suited for such a purpose or the water may be collected from the main river or other pools simply because the source is conveniently located.

The Indian customs are such as to depress the occurrence of dysentery. These customs are to drink water from clear running creeks (see map of San Carlos), and to perform their ablutions either in the large river or to dig holes for their excremata. If holes are dug in the bush they are inmediately covered up after use. The Indian, unless educated otherwise, considers the communal use of a structure such as a collecting booth for feces and urine as an evil. It would thus appear that the invading culture (Spanish American) with its convenient latrine often in juxtaposition to the latrine, has furthered the dysentery problem.

Some of the latrines observed were of such a character that even the investigators used to the inconveniences of the bush felt repelled by the utterly uninviting stench and the great scatter of soiled paper throughout the establishment. Toilet paper, in many tropical areas of high humidity, offers itself as a remarkable medium for growth of molds which renders the paper useless. Latrines built by special sanitary engineers were misused, had eroded screens and were halt filled with water. During the dry season when they were erected they were presumed to be ideal and satisfactory in every way.

If the wretched latrine is to be used, the use insecticides and disinfectants must be encouraged, otherwise dysentery will be present. The authors of this report endeavored to encourage the Indian practice of waste disposal.

Amoebic dysentery exists as far as could be determined in from 2-5 per cent of the population. Stool examinations at Waspam, revealed that 7 per cent of the adults and 2 per cent of the children had

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164 evidence of amoebic dysentery. Many of the patients were symptom free but gave clinical histories of occasional periods of cramps and blood and mucous in their stools. One person was seen in exhaustion from the chronic diarrhea of feces mingled with blood and mucous (sago-grain stool). Most of the people with the disease complain of easy exhaustion and appear to be chronically fatigued. This disease like bacillary dysentery is commonest in the larger villages where food has a greater opportunity to be contaminated by fecal matter or infected water. In isolated smaller villages the disease is rare, if ever present. The source of amoebiasis in such areas is not always simple to ascertain since many persons eat the same food and some become infected and others not. The role of carriers of the disease requires a special study which we were unable to perform.

Skin diseases

In many communities people are afflicted with tropical skin sores presumably of fungous origin. The diagnosis of the lesions is difficult, smears observed under the microscope reveal mycelia of all varieties. Certain ulcers may be of spirochaetal or bacterial etiology but we were not sufficiently specialized to assume the responsibility of a specific diagnosis. The persons in about one fourth of many communities have with some sort of mycotic lesion, in other communities skin diseases may be less in number. Needless to say there is no satisfactory method of treating the majority of such lesions. The usual lotions containing Salicylate, thymol, cooper sulfate, etc. may offer temporary improvement or increase the dermatitis. It would seem difficult to suppose that topical application of some agent would attack a mycelar structure extending into the deep tissues. It was our impression that a systematic drug was needed that would have fungicidal or fungistatic effects. Many of the natives informed the observers that lesions began as a chigger sore or as a result of an insect bite and one may speculate that fungus infection may occur in certain areas of the skin where a break in structure has occured. It is therefore recommended that sores or bites are treated with fungicidal agents providing, of course, that the agent does not in itself provoke a dermatitis.

SUMMARY OF DISEASE AMONG COCO RIVER MISKITO INDIANS:

Suggestions for amelioration

000 The salient public health problems of the Coco River Basin are

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759 rendering health service to this situation. Physicians, in general, find the territory unremunerative and as a consequence cannot be induced to venture or remain in that region. We are therefore confronted with the problem of adapting our method to the situation even though the procedure introduced may not be ideal.

For this reason Dr. Thaeler at Bilwas Karma has trained young men to act as agents for the central clinic. The men arrive at Bilwas Karma and undergo a serious series of lectures and demonstrations, then a period of internship and are forthwith prepared to carry out limited medical activities in the communities from whence they came. In this process of adaptation it is important that the trainee return to his original community, for his people know him, place trust in him, and adaption to a porgram is simplified. Furthermore the trainee is at ease with his own people, his prestige is increased and his relatives offer odequate security for his success.

164 759 The diseases in which an empirical diagnosis can be made with a medicum of success are as follows: malaria; yaws; pinta; acute dysentery (presumably bacillary); chronic weaking dysentery; (presumably protozoal or helminthic); helminthes; and skin infections. The trainee is taught mainly in terms of these major diseases, first aid and rudimentary principles of child-bearing and pediatrics are secondary. The system ordinarily employed by the Indians in first aid is not to be condemned, obstetrics and pediatrics do not constitute subjects of sufficient public health importance to this region. The trainee is taught insect control measures and the use of certain speciific drugs for the diseases just described. His medical supplies consist chiefly 278 of atabrine, oil of chenopodium, magnesium sulfate, sulfaquanidine, vioform, carbarsone, antiseptics, gentian violet pills, a few miscellaneous drugs such as aspirin and some first aid equipment. The trainee is taught to send many of the patients whom he regards as special cases to the hospital. There is a possibility that such a system may 000 succeed, particularily if the trainee or agent is brought back to Bilwas for refresher courses. The merits of the system result from one basic fact and that is that Dr. Thaeler is a well trained clinician with considerable understanding of these Indians. It seems highly important that such a program be directed only by a well qualified physician or physicians who have had special training in medicine as applied to societies of varying cultural traits. This fact has been recognized to some extent by the British in their various schools of tropical or colonial medicine and by the United Fruit Company. In other instances tropical medicine may be academically isolated from the societies who should receive the results. The mistakes made by young physicians,

I: Conzemius M-4, 5 (1921) 1932
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handles.[14] These conditions are not yet apparent on the hands of children.

HAIR.—All these Indians have an abundance of hair growth extending very low over the forehead, but it is very scarce on the other parts of the body. The hair is usually black, and very straight and coarse, but occasionally hair with very long low waves may be met with among the pure Indians. Gray and white hair occurs sometimes but not by far as frequently as among the white race. Baldness is practically unknown. Beard growth is very scarce, while chest hair is totally absent among the pure Indians.

LONGEVITY.—There are no reliable figures to be obtained regarding the age of the older Indians. Very few of them seem to have passed their sixtieth or seventieth birthday; still during the years 1917–1922 the writer met a number of Indians who were about 4 to 6 years old at the great eruption of the volcano Cosegüina on the Bay of Fonseca in 1835. This catastrophe, which was accompanied by great earthquakes, is still spoken of by these Indians as the "Great Darkness" (M.: *tikmya-tara;* S.: *puk-sani, puk-barak*);[15] a thick rain of ashes poured over the coast at the time and the sun was as invisible as at night.

DEFORMITIES.—In former days deformed children were not allowed to grow up; they were either buried alive or left to starve. This accounts for the rare cases of deformities encountered among these Indians. Only the strong and healthy being allowed to grow up and produce children, there is little variety of physical and mental development. Even were such a deformed child allowed to grow up, it would not easily find a mate and would die without leaving any children behind. In civilized countries deformities are propagated, as such people will find someone to marry them if they have fortune.

If an Indian has some deformed limb, either brought with it into the world or the result of an accident, he will secrete it as much as possible from the sight of other people, as such is considered a great disgrace. It would be an insult to ask him to show it or to even refer to it.[16] In case of a dispute among Indians one will immediately pick out the weak points in the personal appearance of his adversary.

[14] See the illustration given by Schultz (69).

[15] The abbreviations for the tribal names used in the present study are the following: M.=Miskito; S.=Sumu; T.=Twahka; P.=Panamaka; U.=Ulwa.

[16] At the Sansan village on Rio Coco the writer knew a Miskito who had lost several fingers on one hand through an accident at the gold mines of Pispis; from that time on he always carried a bandage around the mutilated hand. In the same village a young boy, having lost several toes, was continually wearing a shoe on that foot, although the other foot was always bare.

1: Conzemius M-4, 5 (1921) 1932
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826 heard the peculiar sound produced by two trees rubbing against each other during high wind.

842 STERILITY AND ABORTION.—Sterility is considered a disgrace, and the average husband will abandon his wife if she is unable to bear children. Abortion and prevention of pregnancy are accomplished by the use of certain herbs. In general the Indian woman is very prolific, but infant mortality is also very high.

[847]

[165]

847 INFANTICIDE.—In former days babies of the female sex were often exposed and left to die, as they were supposed to bring ill luck. Male children are always received with great joy, which the father manifests by shooting off his gun. Deformed children were buried alive in olden days, as they were supposed to be possessed by an evil spirit, or to have been begotten by such one. A similar belief is held by many other tribes in both Americas and accounts for the total absence or scarcity of crippled persons in such regions.

847 Twins were also exposed, as they were said to be a proof of the wife's disloyalty to her husband; the latter considered that only one
845 of the two infants could possibly be his. If twins were of different sex the female was always killed. Lehmann (c: I, 405) states among the Miskito the red dog (*pdûan*) is the master of the twins, and that for that reason these Indians whip dogs at the birth of twins (*pdûnki*), but this report needs confirmation.

854 CHILD CARRYING.—The women carry their children in a long cloth which they sling over the back, tying the two ends together in front at the breast. This way the mother is not prevented from following her usual occupation, as both her hands are left free, while the child is firmly secured in a safe and comfortable position. The prevalence of bowlegs among these Indians may possibly be ascribed to this manner of carrying the infants.

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855 CARE OF CHILDREN.—The Indian child receives little attention from its parents, yet it rarely cries. The parents have, however, great patience toward their offspring, and they seldom chastise a naughty child. Should they, however, lose their patience and seize the whip, they may administer fearful beatings, but such cases are extremely rare. Lullaby songs are rarely heard, but the parents tell their offspring fables, legends, and fairy tales.

862 The last child is not generally weaned until the fourth year and sometimes even longer. I have observed cases among the Miskito where the young boys alternated their mother's breast with their father's tobacco pipe.

868 EDUCATION.—As the child grows up it is made acquainted with the occupations of its parents. The boy accompanies his father on hunting and fishing journeys as soon as he is strong enough to do so. The father makes toys for him, as diminutive canoes and paddles; later he obtains small bows and arrows in order to practice shooting at birds

3: Pijoan D-5 (ca. 1945) 1946
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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[33] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[36]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[33] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk suplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300), II. Ossification of the bones of the wrist (pp. 494-509), III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, 56.

3: Pijoan D-5 (ca. 1945) 1946
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[164] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [757] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[88] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[88] Brumpt. E. Precis de Parasitologie, 4th ed., 1927, Paris.

1: Conzemius M-4, 5 (1921) 1932
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FESTIVAL DRESS (MISKITO).—M. W. (308) gives us a description of the gala dress of the Miskito which was worn on festal occasions. Besides the loin cloth the men wore cotton bands with bright feathers attached around their wrists and above and below the knees. The body, or the face only, was painted with pinewood charcoal, over which a "varnish" of turpentine was applied. On the breast was a thin plate made of a Spanish dollar piece beaten out flat, the successor of the gold plate met on this coast and in Costa Rica and Panama at the time of Columbus. Between the shoulders was suspended a tube made from a shin bone, with a bunch of feathers, while sea shells depended from the ears. A rod of bone or cane was worn at the pierced septum of the nose; a turtle hook, inserted in a perforation of the lower lip, supported a pendent plate of brass or shell.

Nowadays the Miskito wear on feast days old coats which they have obtained from the foreign residents. The bright-colored necktie, worn sometimes without any collar, is then allowed to fall over the coat. The socks, which are not worn on ordinary occasions, are pulled over the trousers like overboots. Bright-colored handkerchiefs (*aikar*) are also in great favor.

FESTIVAL DRESS (SUMU).—At their festivals the Sumu of to-day paint the entire body red and black, so that it is impossible for them to recognize each other. At such an occasion their only clothing consists of a loin cloth and a headdress (*sira*). The latter is made from the split stem of a kind of bamboo, known locally by the Miskito name *bratara*, from which the bark has been taken off. The different slices are painted and then tied together with black cotton thread, and the cap thus formed is ornamented with the feathers from gaily colored birds, as parrots, macaws, and toucans, or the curly head feathers of the curassow. From this headgear depends a piece of "white tunu" or tree-bark cloth; this part of the cap is called *pakna*. It is painted with various designs, and hangs down the back to the hips. On the neck, wrist, and knee they wear, besides, strings of beads worked into designs; round the upper part of the arm they tie a cotton string to which small feathers have been attached.

HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumuru, sumuru*) or the English "straw hat" (*trahat, tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

FOOTGEAR.—Sandals are not known in the region under consideration, but they are used by the Paya. Moccasins are made occasionally by the Miskito, and shoes are bought in the local shops, but there are no native names for these articles. The women do not use any footgear at all except in the more advanced communities.

1: Conzemius M-4, 5 (1921) 1932
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TEETH.—Formerly the Sumu used to file or rather chip their teeth to sharp points; this was a laborious process and was performed by placing a dull knife against the back of the tooth, while the front of it was tapped with a stone implement. 304

EARS.—In 1502, on the testimony of Columbus, certain of the coastal tribes living to the west of Cabo Gracias a Dios, whether Miskito or Paya is uncertain, distended their ears to such an extent "that they might put a hen's egg into them." This statement is confirmed nearly two centuries later by Exquemelin (Sp. ed.: 185; Engl. ed.: 102; French ed.: I, 294–295), who states that the Indians of Rio Xagua (Rio Aguan) on the coast of Honduras were called by the buccaneers "Great Ears" on account of their extraordinary and large ears. Dampier (I, 32) also mentions a curious manner of ear deformation current among the Kukra of Corn Islands during the latter half of the seventeenth century. Both sexes from these islands had their ear lobes pierced during childhood; "by continually stretching with great pegs the opening became as large as a milled five-shilling piece." They wore therein round, smooth pieces of wood, "so that their ears seemed to be all wood with a little skin about them." [171]

LEGS.—From the days of early infancy the Sumu females tie a narrow piece of cotton cloth firmly above the ankle and again below the knee. These bands, if ever removed, are immediately replaced by others. As a result of this custom the parts of the legs thus constricted are very thin, being hardly thicker than the actual bone, whereas the muscles of the calf bulge out to an abnormal degree. This custom, which was observed already by Dampier (I, 32) among the Kukra of the Corn Islands during the latter half of the seventeenth century, is also current among many Carib tribes of South America. Similar bands are occasionally worn by the females at the wrist and below the elbow, but here they serve merely the purpose of ornamentation. [171]

VARIOUS.—Circumcision is said to have been practiced in former days by some of the Sumu tribes, but the writer was unable to obtain any details regarding that custom. Until quite recently the face of the young Sumu was also scarified.

DWELLINGS

VILLAGES.—The villages (M.: *tāuan*, from the English "town"; S.: *asañ*) are constructed generally along the waterways, as the sea, lagoons, or rivers, which form the principal means of communication. The Miskito of the lower Rio Coco and of certain parts of the Nicaragua coast have some large villages with from 100 to 500 inhabitants, but the Sumu settlements consist of only two to six huts and count from 6 to 25 inhabitants. On account of the danger from floods the inland villages are often perched upon high banks of the stream. 361

1: Conzemius M-4, 5 (1921) 1932
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or other food out of the hot ashes. This tool has also been observed among the Ulwa of Rio Escondido (Wickham, c: 200) and it is very common among the Rama and the Guatuso. The two last-named tribes, however, make these tongs from a small species of palm, the "caña danta" or "ahtak," which they call, like the tool itself, by the names *kiskis* (Rama) and *kaskas* (Guatuso).[32]

MORTARS.—Large wooden mortars (M.: *unu, no*) are found among the Miskito to pound grains and fruits with the aid of a hard wooden pestle (M.: *unu mihta*). The latter is generally single headed and tapers gradually toward the handle end; the double-headed type, which is practically cylinder shaped, is also found occasionally. This mortar has a wide distribution in South America, Africa and Oceania. It was found among the Miskito toward the end of the seventeenth century and is mentioned in those days side by side with the metate (M. W.: 307, 308).

METATES.—The Sumu do not know the wooden mortar, but they employ the metate or mealing stone (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) for grinding maize and cacao and for pounding fruits and berries. The common metate, which may be found in almost every household, is a flat-topped, natural river bowlder, with a rounded waterworn pebble serving as muller or "mano" (M.: *walpa mihta;* S.: *ki mak*).

COOKING VESSELS.—Light tripod iron pots (M.: *dikwa;* S.: *suba, yasama suba*) are now found in every household, and have replaced the earthen vessels (M.: *sumi;* S.: *suba, sau suba*) for cooking purposes. In order to remove the hot pot from the fire the Indians use short wooden sticks with a hook at one extremity, which they put round the ears of the pot; it is known by the following names: M.: *tiñkrus, piñkrus;* T.: *iskrusta;* P.: *pan-alni;* U.: *pan-alka.*

WATER CONTAINERS.—Large calabashes with a small round hole cut in the apex, just large enough to insert a finger, are the common water canteens (M.: *kahmuntara;* T., P.: *sulun;* U.: *taman*). This is the "goat" of the Creoles. Sometimes a corncob is inserted in the opening as a stopper.

Segments of the large species of bamboo are also used to haul water in certain regions. They are made from a section of bamboo stem, so that a nodal septum serves as bottom, while the stem is cut off immediately in front of the next occurring nodal septum.

Fermented beverages are stored in large earthen vessels (M.: *sumi;* S.: *suba, sau suba*); wooden casks of foreign manufacture and homemade troughs are also employed for this purpose.

[32] The Cuna and Chocó Indians of Panama use a similar tool consisting also of a double-bent sliver from the stem of a small palm, while the Ona and Yamana of Tierra del Fuego use a split tree branch for pincers. (Vide E. Nordenskiöld, Comparative Ethnographical Studies, vol. 8, Göteborg, 1930, pp. 65–67.)

1: Conzemius M-4, 5 (1921) 1932
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412 met with in certain parts of South America. The ordinary stone ax may also have been utilized as an adze by merely shifting the handle fixation from a vertical to a horizontal plane.

HOE.—In many huts a hoe can be found nowadays; it is used on the fields and in clearing away the grass and weeds growing in front of the dwellings. The hoe is of recent introduction and is known by its English name (u).

KNIFE.—Large knives (M.: *skiro*, *kisuro*, from the Spanish "cuchillo"; S.: *kohbil*) now form part of every household.

252 SUGAR MILL.—A primitive sugar mill (M.: *trañko;* T., P.: *tisnak tãihnin;* U.: *tisnak panka*) is employed by these Indians to squeeze the juice out of sugarcane. A stout post is buried partly in the ground, so that it will reach about 3 or 4 feet above the surface. Close to its upper extremity a wooden slab is mortised in and wedged tight. Just above this slab, which looks like a small platform, there is a hole in the post, where a stout bar (M.: *mihta;* S.: *tiñ*) fits loosely. One of the women lays a piece of cane on this "platform," her husband inserts the pole in the hole and presses downward, crushing the cane, whereupon the juice flows into a receptacle placed on the ground. The woman slips the cane forward until every part of it is crushed, and finally twists it like a rope to wring out all the juice.

252 This mill is common in the regions bordering on the Caribbean
171 Sea. Several mills of this type, found in South America and on the Isthmus of Panama, have been figured by Nordenskiöld.[24] It is well known that sugarcane was introduced into the New World by the Spaniards; still this type of mill is never met with among the whites. On the other hand, the negroes of eastern Central America and the Bush negroes of Guiana use it commonly, more so than the Indians themselves. According to the prominent African specialists Seligman and Lindblom, sugar mills of this type are not met with in the Dark Continent. Neither are they known from Melanesia. Nordenskiöld[25] believes, therefore, that this implement has been invented by American Indians in post-Columbian days, when they had become acquainted with sugarcane. In view of the fact that this sugar mill is more common among the negroes than among the Indians, I am inclined to believe that it is a post-Columbian invention made in America (probably in the West Indies) by negro slaves, who were largely employed on the sugar estates. Even to this day it is not met with among the Sumu of the interior, who crush the canes in primitive wooden roller mills turned by handspikes (cf. Wickham, b: 216; c: 206).

[24] Comparative Ethnographical Studies, vol. VIII, Göteborg, 1930, pp. 80–84, figs. 39–43.

[25] Ubi supra, p. 82.

1: Conzemius M-4, 5 (1921) 1932
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sashes (M.: *yalaswa;* S.: *bamaksitna*), hammocks (M.: *silmika;* S.: *wak*), and into shot bags or hunter's bags (M. and S.: *malipuk*). The long sleeveless garment, called *wipal* by the Miskito and *kiškura* by the Sumu, is not made any longer. All these cotton textiles, although coarse in texture, are soft to the touch. They are of excellent quality and the patterns are always inwoven. Sometimes a fringe of the white down of the muscovy duck extends all round the selvage. According to Exquemelin (Engl. edit.: 251) bed sheets were also made of cotton in former days by the Miskito.

SPINDLE.—The spindle (M.: *blakat;* S.: *malkat, malakat*)[37] consists of a shank made from the hard wood of the pejivalle palm. It measures from 1 to 1½ feet in length and tapers to a point on both ends. The whorl or fly is inserted at about 2 inches from the lower extremity, and the whole presents the appearance of a gigantic top. The whorl is usually made of a rare, very hard and heavy marblelike rock, which occurs in different colors and is called *kupa* by the Indians. Turtle or tortoise shell, manatee bone, clay seeds, and even heavy wood are also employed occasionally for this purpose. The shape of the whorl varies considerably; most commonly it is of conical form. The largest diameter varies from 1 to 1½ inches, and the height from three-quarters of an inch to 1 inch.

SPINNING.—A very curious method is used to spin (M.: *blakaya, bitikaya;* T. and P.: *wdinin, wdinini;* U.: *tdihnaka*). A cotton thread, drawn by the left hand of the operator from a pile which she is holding in her lap, is attached to the spindle a little above the whorl. The spindle is placed in a calabash and is made to revolve very rapidly by means of the thumb and forefinger of the right hand. With each twirling movement the spindle is kept in rotation for about half a minute by the momentum of the whorl, during which time the operator is continually drawing out cotton thread, which is then wound on the spindle. This process is repeated until the spindle is full.

WEAVING.—The cotton thread is woven (M.: *lukaya;* T.: *kilnin;* P.: *anini;* U.: *dalnaka*) on a horizontal loom (M.: *slabin;* S.: *slabin, silamba*) of most simple construction and similar to the one shown on the Mexican Codices, and still used by the Maya and other Central American tribes. It consists of a cloth beam and a yarn beam, which are connected to each other by the warp. The yarn beam is attached to a house post, about 6 feet from the ground, while the cloth beam is attached round the back of the weaver by a thick cord, enabling her to tighten the warp at will by merely leaning backward. The completed material is rolled up at the lower end. Looms of similar technique are also found in South America and Oceania.

[37] Cf. Mexican *malacatl*.

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411 barbs have been made with the aid of another file. Previous to the introduction of iron and steel the Indians made their spear points of pointed and barbed pieces of bamboo. A cord about 50 feet in length is attached to the point, while the other end of it is wound round a long reel of light wood, which acts as a "bob" or float, and is stuck at the distal end of the staff. These Indians call the float *kunkun*, which name is also applied by the Sumu to the balsa tree (*Ochroma lagopus* Sw.), from which it is usually made. Sometimes the red cedar (*Cedrela* sp.) or the roots of the "bobwood" tree (*Anona palustris*) are employed for this purpose by the Miskito.

The javelin is used only for the larger fishes, such as the carplike snook (M. and S.: *mopi*) and the salmonlike tarpon (M. and S.: *tapam, takpam*) which are frequently met with in the larger rivers.

226 Two men generally work together when fishing with this implement. The one in the bow of the boat signals his companion how to steer by motioning with the hand. They glide noiselessly over the water, and when within reach of a fish, that is, about 60 feet distant from it, the bowman stands up with the spear in his right hand and aims and throws at a single fish, which he may be unable to see through the thickness of water. The only thing visible is the fish's "wake," that is, the ripple produced on the surface of the water as he swims lazily along. By that the Indian guesses the species of the fish as well as the depth at which he swims under water. It may be 2 feet. The spear is thrown in such a manner that it strikes the water almost vertically; the Indians seldom miss, for they have practiced this sport from early childhood. Upon striking the fish, the cord unwinds; harpoon and reel become detached from the staff, but they are attached to each other by the cord. The reel acts like a float and points out the whereabouts of the prize; with its aid the latter is secured. When the fish is tired, it is drawn near the canoe, killed with a stick, and hauled in. Then the staff, which is also of floatable wood, is likewise caught.

At the beginning of the rainy season the Miskito also practice this sport at night, especially in the lagoons. At such places where the fresh water comes in contact with the sea water it blazes as the fish swims along, thus indicating the latter's presence.

On dark nights the fish is also speared with the aid of a pitch-pine torch which is held by a third man in the boat. The glare of the torch attracts the fish and enables the bowman to spy his prey, which is immediately transfixed by the harpoon. This sport of fishing with a torch is practiced chiefly in November and December.

[71] The Sumu seldom employ this fishing implement as it is of little use in the small rocky streams where the bulk of this tribe lives. On the other hand, many Creoles and Ladinos living on the coast have learned from the Indians how to handle it.

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *trisu*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *encinta* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *krasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arloví in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineal tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Zöck (69, 237), however, calls it *liwakumya* in the Miskito

1: Conzemius M-4, 5 (1921) 1932
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411 language, and gives this name also as that of an island among the
278 Mosquito Keys.

The secretions from an indigenous pale greenish-blue frog (*Dendrobates tinctorius*) may also have been used as an arrow poison, as is done by several tribes of Colombia.

411 LANCES AND SPEARS.—Lances and spears, tipped with fishbones or with flint, were formerly used for hunting and fighting, but to-day they are employed exclusively in fishing. (See Fishing and Fishing Implements.) Ferdinand Columbus mentions these weapons and says that they were made of palm wood, black as coal and hard as horn, and pointed with the bones of fishes. The javelin or throwing spear is evidently the weapon mentioned in old Spanish documents under the name of "vara para tirar." According to Exquemelin (Engl. edit.: 114) lances of a fathom and a half in length and tipped with a crocodile tooth were one of the principal arms of the aborigines of the Corn Islands.

SLINGS.—Small slings (M.: *prâûprâûkya*) for throwing stones are sometimes employed to kill birds.

CLUBS.—Wooden clubs (M.: *dyara prukaya;* T.: *di bâûnin;* U.: *dibâûnaka*) jagged with alligator teeth constituted a dangerous weapon in former days, but they disappeared many years ago.

BOW AND ARROW.—Bow and arrow appear to have been the principal weapon of the tribes under consideration; still they are said to have been unknown to the natives of the Corn Islands, who apparently belonged to the Kukra, a subtribe of the Sumu (Exquemelin, Engl. edit.: 114). It is known, however, that the Kukra living on the shores of Bluefields Lagoon possessed arrows, and a description thereof has been left to us by the same author, Exquemelin, whose vessel anchored at that lagoon in 1671. One morning several women slaves from this buccaneer vessel were attacked by a group of Indians and pierced by a great number of arrows. The latter were made of palm wood, 8 feet in length (5 to 6 feet according to the French edition), round in section and of the thickness of a thumb. They were tipped with sharp points of flint which were tied firmly into the arrow together with a wooden hook, so that the arrow point presented a harpoonlike appearance; the other extremity ended in a point. Other arrows had at the distal end a small wooden box, 1 foot long, filled with round pebbles, evidently in order to increase the power of the arrow. The Indians had been careful enough to put some leaves in this box in order to reduce the noise produced by the pebbles upon shooting the arrow off. Some of these arrows were painted red (Exquemelin, Engl. edit.: 247–248; Span. edit.: 446; French edit.: II, 257–258).

1: Conzemius M-4, 5 (1921) 1932
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411 used for fishing, consists merely of a shaft of wild cane into which a sharply pointed foreshaft of pejivalle wood, hardened in the fire, has been inserted and firmly tied as stated above. The latter is smoothed with the aid of a machete or large knife, which tools are used after the manner of a carpenter's plane. This kind of arrow is the largest one found on the Mosquito Coast, and it may reach 6 feet in length. Occasionally it is jagged on either side into more or less definite barbs. The arrow does not sink, owing to the feather-light shaft, which will always rise to the surface. On the Mosquito Coast the use of this arrow has also spread to some of the Creoles and Ladinos.

HUNTING ARROWS.—The hunting arrow (M.: *trisba;* S.: *sibak*) measures only 5 feet in length, as the shaft of wild cane is considerably shorter than in the one used for fishing. Unlike the latter, the hardwood foreshaft is not pointed, but a piece of iron or steel made from barrel hoops or other scrap iron is inserted in front. The latter is lanceolate in shape and has sharp edges. As the art of melting metal is unknown to these Indians, they make these arrow points with the aid of files. According to Exquemelin (Engl. edit.: 251), the Miskito in 1671 used iron points or alligator teeth to tip their arrows. Flint, obsidian, turtle shell, sharp fishbone, and shark teeth [47] were also used for this purpose in former days. Barbed arrows and trident or composite arrow heads are now unknown.

BIRD ARROWS.—For birds and small animals the Indians make use of small arrows with blunt knobs of hardwood or beeswax, called *uru* by the Miskito and *ubo* or *ubur* by the Sumu. With these arrows they seldom kill, but merely stun the game, so that they can capture it alive. They are also used in the houses to scare away dogs, pigs, and fowls without being compelled to get up from the seat.

QUIVERS.—Quivers (M.: *trisba taya* "arrow skin") were apparently of ceremonial use only, and they were employed to carry the arrows during the festivals. They were made of red deerskin, as is indicated by their Sumu name (T.: *sana unlak;* P.: *sana onitak;* U.: *sana okatak*). At the present time quivers have disappeared entirely, and the arrows are always carried in the hand by the hunter.

FIREARMS.—The buccaneers of the latter half of the seventeenth century apparently introduced firearms among the Miskito.[48] In

[47] The Rama still employ shark teeth to tip their hunting arrows, and they claim that a wound caused with such an arm will almost invariably be fatal.

[48] It is possible that firearms were already introduced among the Miskito at an earlier period, during the years 1630 to 1641, when the two islands of Providencia and Santa Catalina, situated off the Mosquito Coast, and now belonging to Colombia, were colonized by English Puritans. The latter opened friendly and commercial relations with the Miskito, who were living chiefly around Cabo Gracias a Dios and Sandy Bay in those days. In 1633 a certain Capt. Sussex

1: Conzemius M-4, 5 (1921) 1932
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the Indian is working as a day laborer he will keep track of his time by tying a knot in a string every evening, and finally compares the total of the knots with the amount of days credited to him by his employer. These small cords also take the place of cards of invitation for a great festival. One of them is carried by the messenger to the headman of each one of the invited villages. Each night one of the knots is severed, the last one representing the day of the meeting.

Instead of knotted strings there are also other systems of *pyu*, as, for instance, tablets or pieces of wood on which notches have been cut with a knife, or wherein small holes have been drilled for the reception of thin sticks. The women also make use of calabashes in which they place or from which they withdraw a small pebble every day. Each one of these notches, sticks, or stones signifies a day.

The presence of these simplified *quipu* among the Miskito and Sumu has already been observed by Roberts (270) and by Sapper (c.: 265). Similar systems may be found among the Talamanca tribes of Costa Rica and in many parts of South America and Oceania. Very complicated systems are known only from the ancient Peruvians; in their elaborate *quipu* the knots varied in value according to their coordinate placing. They were used for calendary calculations and also for statistics.

DAYS.—Great distances from one place to another are expressed by the number of "sleeps" or nights that one will have to sleep on the journey.

The approximate time of the day is not observed from the length of the shadow, but directly from the position of the sun. The Indians will point to the heavens and indicate the approximate position of that celestial body at the time at which a certain action took place.

YEAR.—The Indians calculate the year according to the return of the dry season, or summer; both the words "year" and "dry season" are expressed by the same word (M.: *mani;* T., P.: *kure, kuri;* U.: *mamaka*). The approach of the rainy season, or winter (M.: *li mani, li tâim;* S.: *wasma*), or the dry season, is known from the behavior of the animal and vegetable world. Very few Indians are able to give their approximate age. The great eruption of the Cosegüina in 1835 formerly afforded a convenient reckoning period to start from.

MONTHS.—The year was formerly subdivided into 13 months or "moons" (M.: *kati;* S.: *wâiko*) of 29½ days each, corresponding to the average duration of a lunar revolution. As it was known, however, that the solar year corresponds to considerably less than 13 lunar revolutions, the thirteenth month was occasionally dropped in order to keep the moon in adjustment with the seasons. Nowadays

1: Conzemius M-4, 5 (1921) 1932
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534 through the shell, emerging through a small hole cut just opposite the stem end. With other specimens the handle does not pass through the calabash, but it is firmly attached to it by means of fiber strings passed through various perforations drilled in one end of the gourd. The seeds strike the inner wall of the thin shell and the central handle axis, resonating somewhat like castanets.

WIND INSTRUMENTS.—Flutes or flageolets (M.: *bra;* S.: *bara*) are in common use. They are about a foot in length, and are provided with two, three, or four finger holes. Beeswax is applied to the mouthpiece. They are made from a species of bamboo known by the Miskito name *bratara*.

Short 1-toned flutes are also made from the femoral bones of deer, tapir, or other large animals. They are used to lure the agouti by imitating the voice of that rodent, and from the purpose they serve are called *kyaki wasbaya* (M.), *malka kuñnin* (T.), *malaka kuñnini* (P.), or *malka kuñkana* (U.).

Several flutes are used exclusively at the festivals of the dead. A small flute (M.: *limi-mina, limi-dusa;* S.: *nawa-wakal*) is made of jaguar bone and has the mouthpiece covered with beeswax. Another short flute (M.: *yul*) is made from the thin *kliswi* reed. Stout bamboo flutes, measuring up to 6 feet in length, with one end resting on the ground, are blown by the sukya. This instrument has a mouthpiece of bird skin and beeswax and has a number of lateral ventholes; it produces a loud noise not unlike the roaring of wild beasts.

Panpipes are unknown in the country under consideration. Pottery whistles are no longer manufactured, but a few specimens have been unearthed in the Rio Tinto (Honduras) region.

Conches (M.: *kiptaya;* S.: *masi*) are used as trumpets throughout the Mosquito Coast.

Jew's-harps (*yusap*) were introduced many years ago and are in great favor; they produce but few tones, but the music sounds sweet and soothing and has a great charm for the Indians.

MUSICAL BOW.—The musical bow (M., S.: *lukku*), the only stringed instrument known in ancient America, produces a plaintive sound and is occasionally played by the Indian women. It is formed of a small wooden bow, chiefly of split bamboo or other tough pliable wood of 2 to 3 feet in length. Both ends of the bow are connected by a thin string of pita or silk grass. The bow is pressed against the mouth, which acts as resonator, and the string twanged by means of a pick of wood. Harrower (47) collected a large specimen on the Mosquito Coast in 1924 with a gourd for a sounding box and a string made of a heavy liana.

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171 More complicated systems are found in other parts of Central America, but practically always among the Indians. In 1912 the writer saw at Ocotal (Nicaragua) one of these instruments in the

1: Conzemius M-4, 5 (1921) 1932
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hands of an Indian from the neighboring village of Cuje, who called it "quijongo" or "sambumbio." It was at least 5 feet in length and 1½ inches thick. A little from the center the string was tied back to the arc with the aid of another thread, so that two strings of unequal size were formed. This instrument could produce a great variety of tones. In Olancho (Honduras) I saw later a bow of equal size but with a calabash resonator; it was called "caramba" there. The gourd was fastened with the mouth downward at the convex surface of the arc, at the same point where the cross string had been attached to the wood, that is, about one-third the distance from one end. The Rama of Nicaragua also call this instrument *lusiko*, while among the Lenca of Honduras it is known as *bumbum;* it is also found among the Kekchi of Guatemala, and was known to the Island Carib of the seventeenth century, according to De Poincy.

In spite of the fact that in Central America the musical bow is limited to the pure Indians, it is supposed to be, like all other stringed instruments, of foreign origin. The various names by which it is known in Central America savor of African origin. It is also found in certain regions of South America and has a wide distribution under different forms in large areas of Africa and Melanesia.

OTHER INSTRUMENTS.—Violins, guitars, accordions, and harmonicons may be found in certain regions; they are chiefly of German manufacture. Instead of beating the drum or shaking the rattle, the Miskito occasionally clap the hands together at the dances in order to obtain a rhythmic effect.

AMUSEMENTS: SONGS, DANCES, STORY-TELLING, GAMES, AND SPORTS

SONGS.—The Sumu rarely sing (M.: *ßwanaya;* T., P.: *ßwannin, ßwannini;* U.: *unbßmaka*), but the Miskito sing occasionally when they are either sad or happy. All their songs are soft and plaintive, and they all sound alike to the stranger, who is unable to distinguish the gay songs from the sad ones, unless he has lived some time among the Indians. The sukyas of both tribes sing upon practicing their rites of incantation, but owing to their intermingling of many old and obscure phrases, these songs are unintelligible to the other Indians.

I was unable to collect any indigenous song, but Young, Fellechner, and Bell have been more fortunate than I. In these songs appear many phrases not used in general conversation. Fellechner (268) obtained a number of songs which were apparently composed in an antique form of the Miskito language, for the interpreters were unable to give the meaning of many parts of them. Most of this material has never been published. The following specimen is that

1: Conzemius M-4, 5 (1921) 1932
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whistling and blowing over it for about 5 or 10 minutes. Should he suffer a relapse and undergo another treatment the sukya will demand another fee.

RELIGION: SUPREME BEING, TRIBAL HEROES, SPIRITS, CREATION OF MAN, DELUGE, CHRISTIANIZATION

SUPREME BEING.—The religious system of these tribes has been fast disintegrating for the last generation. Nowadays both tribes believe in the existence of a Supreme Deity, which the Miskito call *Wan-Aisa*, "Our Father," and the Sumu *Ma-Papak* or *Ma-Papañki*, "Our Father" or "Sun-Father." Both tribes also make use of the name *Dawan*, "Master" or "Lord." This conception has probably been borrowed from Christianity; still Exquemelin (Engl. ed.: 251) states that in his days (1671) the Miskito believed in one God. This Deity, which dwells in heaven, is sometimes confused with the various tribal heroes. According to these Indians, God has created the world and the inhabitants, but He does not appear to worry a great deal about the individual being, nor is He able to ward off the various dangers which continually menace mankind; consequently He is not honored with offerings, prayers, worship, or sacrifice. Furthermore, He lives so far away from earth that it is impossible to enter into relations with Him, and He can not be approached by man.

MINOR GODS AND TRIBAL HEROES.—Both the Miskito and the Sumu believe in the existence of a number of supernatural beings, living formerly on earth like man. These are the sun (M.: *yu, lapta;* S.: *ma*), thunder (M.: *alwani;* S.: *alwana*), moon (M.: *kati;* S.: *wčiko*), rainbow (M.: *kumadora;* S.: *wayauli, wayuli*), stars and planets (M.: *slilma;* T., P.: *yala;* U.: *ma-baka* "small sun"), the Pleiades (M.: *pupu-wihta;* S.: *kalpas*). According to a Sumu myth a bright planet, called by the Miskito *kati-maya*, "the moon's wife," which is seen just above the new moon, was originally a girl, who was raised by her finger tips by *Udo*, the moon god (Heath, c: 77). These various heavenly bodies are supposed by the Sumu to travel in canoes, a belief which is also held by the Cuna of Panama.[88]

Some of these supernatural beings are in charge of the elements and are responsible for the great calamities which appear occasionally. The god of the wind and of the air, called by the Miskito *Prahaku* or *Aubiya*,[89] sends the hurricanes and the great inundations which destroy the plantations and kill the livestock. His representative is

[88] Erland Nordenskiöld, Les Rapports entre l'Art, la Religion, et la Magie chez les Cuna et les Choco. Journal de la Société des Americanistes de Paris, tome XII, Paris, 1920, p. 150.

[89] Cf. "obi" or "obeah," a species of sorcery practiced among West Indian Negroes.

1: Conzemius M-4, 5 (1921) 1932
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The spirits may come to the neighborhood of human habitations in their anthropomorphic form and try to seduce Indians of the opposite sex, and abnormal children will be the result of this intimacy. Monstrosities among the animal and vegetable world are also held to be spirits. Just like snakes, these spirits are said to have a great passion for women at the menstrual periods.

CONNECTION OF SPIRITS WITH THE SILK-COTTON TREE.—The silk-cotton tree (M.: *sisin;* T., P.: *panya;* U.: *paniki*) is said to be the abode of the spirits of the departed, and no one ventures under it during the night. It must not be cut down, as by such an act the spirits would be robbed of their favorite resting place, and they would not fail to revenge themselves. Should it be absolutely necessary, however, to cut down a silk-cotton tree, the wrath of the spirits may be avoided by burying something at the foot of the tree in the shape of an offering, as food, red peppers, money, etc. When the tree has been felled, the object in question may be recovered. On Rio Lacus, a southern affluent of Rio Coco, a Sumu used for this purpose two small dolls or puppets (M.: *yapti;* S.: *ditalna*), which he had obtained from the sukya. This procedure, which savors of African origin, is the only case of this sort which I have met among the Sumu, but the habit in question is common enough among the Miskito.

The Indians also claim that a dugout made from the silk-cotton tree will groan continually during the night, and that at the same time it will travel with tremendous speed. A similar plaintive sound is said to be emitted during the dark by mattresses or pillows stuffed with the down adhering to the seeds of the tree. For the above-named reasons the credulous Indians make no use whatever of the haunted tree.

The Creoles and the West Indian Negroes dread this tree even more than do the Indians; according to them the spirit of the deceased, which they call "shadow" or "duppy," leaves the grave on the third day after death in order to roam about the woods, especially around the ceiba or silk-cotton trees. Some believe that these superstitions concerning the tree may have been taken from the Africans; still, the Maya of Yucatan and the Quiché of Guatemala, who have had practically no intercourse with Negroes, hold beliefs regarding the silk-cotton tree similar to those of the Miskito and Sumu. [171]

CREATION OF MAN.—As stated above, the Miskito confound Thunder (*Alasasi*) and God (*Wan-Aisa, Dawan*) sometimes with one another, and both of these supernatural beings are looked upon as the creator of man and the world in general. The Sumu, however, consider the Sun-god (*Uhubapat*) as the Almighty God and Creator of everything, and in former days are supposed to have worshiped him.

1: Conzemius M-4, 5 (1921) 1932
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ties the Indians will part with stone axes only for a comparatively large sum of money.

Similar superstitions about these stone celts are held by the other populations of this part of Central America. The local names "thunderbolt," "thunderstone" (Creoles), "piedra de raya" (Spanish), *alwani mahbra*, *imyula mahbra* (M.), *alwana suma* (S.), *dama up* (Rama) in themselves point to a belief in their celestial origin. They are supposed to come down from the sky with the lightning and they are held responsible for the damage done at such an occasion. They penetrate the soil to a depth of 7 feet and then slowly work their way upward, reaching the surface again in seven years. It is claimed that sometimes such a thunderbolt may be found in a tree which has been struck by lightning. The surface of these celts is always smooth; often they are highly polished. Their color is always supposed to be identical with that of the soil in which they have been discovered.[76]

DIVINING ROD.—The Sumu of Rio Prinsapolca are said to make use of some sort of a divining rod (M.: *smaya kâikaya;*[77] T., P.: *tiñ amañnin;* U.: *ya bohnaka*), consisting of a smooth rod of either cacao wood or wild cane; it is about 3 feet in length, and a cotton thread is tied around the center. The Sumu appear to use the *tapúa* for the same purpose as the Jicaque of Honduras; with its aid they claim to be able to obtain almost any information regarding the future, their luck in fishing, hunting, love-making, etc.

I have not been able to see any of these rods, nor did I obtain any definite details regarding the manner in which they are used. The following account is taken from Collinson (b: 152): "Another very common and favorite method of unraveling the unknown is an incantation by a sukya. He commences operations by cutting a small wand, peeling it, and tying a short string to its top. He then strokes it repeatedly, muttering in undertone words supposed to form an incantation; after this has been done for some time, one end of the stick is placed in the left elbow, and the right arm is stretched out to the string end. If it exactly reaches this when extended to its full

[76] Some of the Creoles and Ladinos place stone axes in their water tanks and earthen water jars, in order to keep the drinking water pure and clean and at the same time preserve themselves from certain maladies. These celts are also believed to protect the houses from lightning, and for that purpose are suspended from the roof. A "true thunderbolt," it is claimed, may be determined by tying a thread firmly around the middle of the celt, and then attempting to burn the thread. This may be done by holding a match to it, or suspending it over a lighted candle, or even throwing it in the fire. If the celt is genuine the thread will not burn. Of course such an experiment can be made successfully with any smooth stone to which a thread has been tied so firmly that there is no air intervening, thus retarding combustion of the thread until the stone itself is hot enough to burn it.

[77] Lit.: "to have a hunch."

1: Conzemius M-4, 5 (1921) 1932
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and they are not to be distinguished in their outward appearance from the ordinary mortals.

According to Miskito traditions their art was introduced by a white man from the east, known as *Almuk-awra* (lit.: "old drift man"), who was apparently some sort of culture hero. This reminds of the Mexican myth dealing with *Quetzalcoatl*, who also came from the east and was likewise a shaman. The first Sumu shaman is said to have been a man named *Ado* or *Mamañ* [80] (Grossmann, b: 4).

THE SUKYA.—This is the name of the lowest of the two kinds of sorcerers found originally among the Miskito and Sumu. The name is also current among the neighboring tribes, as the Paya and the Rama, although the indigenous designations for the priest-doctor in these two languages are respectively *wata* and *turmala*. The term sukya (sukia, suquia) [81] is also employed by the Mova and the San Blas Indians of Panama, and likewise occasionally by the Talamanca of Costa Rica. In the dialects of the Talamanca region, however, the native name is *tsukur* (or *tsugur*, *tsugru*, *tsugrūh*, *tsuku*). In the various Costa Rican languages the elements *tsu* or *ču* mean "to drink" or "to suck," and they occur in words which may be translated by "milk," "female breast"; this is also the case with other Central American languages, as Maya-Quiché, Paya, Mixe-Zoque, Lenca, Xinca, Sumu, and Guaymi-Dorasque. It would appear, therefore, that the word sukya is etymologically related to the above terms, and that originally it meant something like "sucker," as the native medicine man extracts the material cause of the pain or ill being by the action of sucking.[82]

The sukya is generally a man above the average Indian in intelligence.[83] His office is generally hereditary, but frequently he is succeeded by his nephew or his son-in-law. In practically every large village of the Miskito and Sumu habitat there is a sukya to be found; Wickham (c: 207), however, did not observe any such sorcerer among the Ulwa of Rio Escondido. The sukya communicates with the unseen powers [84] and may use his art to the welfare or destruction of

[80] *Mamañ* is, however, the Sumu name for "mother."

[81] The first mention of this name is found by M. W. (300, 302, 304, 306, 307, 308, 309) in the form *succhee*.

[82] See Rudolf Schuller, Las Lenguas Indígenas de Centro América. San José de Costa Rica, 1928 (pp. 53–54).

[83] Occasionally the sukya is an elderly woman. A young woman is, however, not qualified for this office, as she would be exposed too much to the influence of evil spirits and other supernatural dangers, especially at the menstrual period and at childbirth.

[84] Dampier (I, 9) already states that the devil, called *Wallaaw* (= *walasa*, *wlasa*, or *lasa*) by the Miskito, appears to their priest when they desire to speak to him on urgent business. M. W. (308), who writes a little later, that is, about 1699, spells that word *wallasee*.

1: Conzemius M-4, 5 (1921) 1932
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time he will come under the influence of some sort of tutelary spirit which henceforth will act as his protector; this may be the spirit of a person, animal, plant, hill, cloud, star, etc., or some other kind of supernatural being, by whose intermediacy the would-be sukya may converse with the evil spirits. This conception of guardian spirits is found in large areas of America, and it has probably not originated from the tutelary angel of the missionaries.

The candidate is then ready to exercise his profession, but on the day of initiation his food must be prepared according to a manner prescribed by custom. It must be cooked by a young boy or girl, not yet arrived at the age of puberty; a slender hardwood tree, called *liwŝi*, which grows very sparsely in the forest and burns readily in the green state, must be used as firewood.

The sukya is obliged from time to time to strengthen his powers by religiously abstaining from certain food and sexual intercourse, and in other ways lead a life of self-denial.

Among the Sumu any candidate for priestly and medical honors must perform the fire dance; this fiery ordeal must also be repeated occasionally in order to strengthen the connection with the unseen powers. A big pile of *liwŝi* wood is made in a cleared spot in the bush and the whole is covered by a thick layer of bijagua leaves. Fire is then put to the whole, and when in full blaze, the sukya issues from the forest. He has the whole body smeared with black paint, and is entirely naked save for a loin cloth. He then walks upon the pile and remains there standing quietly until the wood is partly consumed. Then he orders the fire divided into four parts, and walks from one pile to the other with his bare feet until all the wood is burned. Strangers are never allowed to witness this performance. The Miskito greatly respect the Sumu sukya for this act which their own sorcerers are unable to perform.

Roberts states that the fire dance is also done by the sukya of the San Blas Indians (Panama), and that the effects of the fire are resisted by some powerful antidote extracted from vegetable fibers. This ordeal is also performed by the shamans of Raiatea (Society Islands), Kandavu (Fiji Islands), and of a tribe in British India, but it has apparently not been observed in other parts of the world.

THE OKULI.—The okuli[85] is the highest shaman among the Miskito and there never should be more than one at a time. The Sumu do not have any sorcerer ranking above the sukya, but many of them recognize the okuli of the Miskito.

The okuli is said to be a special representative of *Alwani*, the thunder-god, or of *Aubiya* (or *Prahaku*), the lord of the air, and is supposed to control the elements. He is much more powerful than

[85] Among the Bribri Indians of Costa Rica olo is the name for a sort of shaman.

1: Conzemius M-4, 5 (1921) 1932
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larger beasts, like the jaguar and the puma, and kills them by introducing itself into their stomach. 925

WATER TIGER.—The water tiger (M.: *li lamya;* S.: *was nawa*) is supposed to be a manateelike animal, but covered with otterlike, glossy hair and a mane. Different species are said to exist, which have the same variety of color as the various species of Felis, the black variety being, however, the most common. This beast has webbed feet and walks awkwardly on land, but it is very swift in the water. It is found chiefly in the larger rivers among the rocks, and will devour any one swimming in the neighborhood or falling into the water; domestic animals and even men are said to have occasionally fallen victim to it. The Indians claim to have shot at it, but never succeeded in killing a specimen.

GIGANTIC BOA CONSTRICTOR.—A very large waula or boa constrictor (M.: *wáula tara;* T.: *wáula;* U.: *wayil*) with two horns on the head like a deer [96] is said to inhabit certain large lagoons in the pine ridges, far away from the nearest Indian village. It is claimed that the common waula or boa turns into such a monster when it reaches old age, and that it then retreats into deep lagoons. Man has no power to kill such a boa constrictor, as bullets have no effect on it; it can be destroyed only by a stroke of lightning.

The creeks leading to the lagoons inhabited by the monster are generally rich in all sorts of game, for no one dares to ascend them. It is claimed that in case anyone should be foolhardy enough to paddle up such a creek, presently a rumbling of thunder is heard; then the water reverses its course, flowing at a tremendous speed back to the lagoon directly into the mouth of the boa constrictor, which swallows the canoe with the intruder. The boat-bill heron (M.: *ukaka;* S.: *wakta*), a most uncanny night bird, is said to be found at the mouth of such creeks in order to warn off intruders.

FABLES OR TALES DEALING WITH BEASTS AND BIRDS

The Miskito know a great number of tales in which animals and birds act, think, and talk like human beings; they are supposed to possess spirits and to live, eat, drink, love, hate, and die just like the Indians. 538 171

These fables remind somewhat of the adventures of Ananси—a sort of god or culture hero—of the Gold Coast; or, Turtle of the Slave Coast; or, Hare (the Brer Rabbit of the United States Negroes) among the Bantu. Heath (a: 52) has drawn attention to the re-

[96] For this reason the Ladinos call it "masacuate" (from the Mexican *mazatl* "deer" and *coatl* "serpent").

1: Conzemius M-4, 5 (1921) 1932
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538 semblance of these fables with the "anancy" or "nancy" stories[95]
171 of Jamaica, so that one can hardly doubt a common origin, and these stories are certainly African.

The following Miskito fable has been given in the Indian tongue by Berckenhagen.[96] I submit herewith the English translation thereof under the title:

Why the Howling Monkey Never Descends From the Trees

538 The tapir and the howling monkey went together into the forest. The tapir was foolish enough to play on a flute which he had inherited. When the howling monkey heard that he asked to buy the flute, but the tapir refused to sell the instrument, and kept on playing it. Then the howling monkey had an idea and he said to the tapir as follows: "As you are unwilling to sell the flute, just lend it to me for a moment to try it; whenever I shall have a flute I will also let you have it." Thereupon the foolish tapir handed the flute to the monkey. Immediately the latter hurried up a tree, whence he kept on blowing the flute without stopping. The tapir then wanted his property back, but the monkey paid no attention to him. Thereupon he became very angry and ran hither and thither in the water and among the spiny vegetation, but the howling monkey kept on playing the instrument. The tapir then decided to lie in wait for the howler, determined to kill him wherever he should find him on account of the flute. For fear of that the howling monkey does not dare to descend from the trees, not even in order to drink, and he quenches his thirst with the moisture from the leaves of the vegetation.

Beware of giving away your inheritance.

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[95] *Anancy* or *anansi* is the term for spider in the Chi language of western Africa; this arachnid plays a great rôle in the larger part of the folk tales of the West coast of Africa from Cape Verde to Cameroon. The name "anancy story" is applied nowadays by the Jamaican Negroes to any legend, myth, or fairy tale which is being told at night, especially during a "wake." Our rural European populations likewise believe that a real ghost story ought to be told at night around the fireside.

[96] Grammar of the Miskito Language, by H. Berckenhagen. Bluefields, Nicaragua, 1894, p. 81.

2: Kirchhoff E-4 (no date) 1948
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THE CARIBBEAN LOWLAND TRIBES: THE MOSQUITO, SUMO, PAYA, AND JICAQUE

By PAUL KIRCHHOFF

INTRODUCTION

M
101 The modern *Paya* and *Jicaque* enclaves in the Caribbean Lowlands may
●171 not all be the descendants of the people so named by the first explorers
177 (maps 2 and 5). It is possible that the culture of the people first discovered on the coast was similar to that from which the present-day *Mosquito* and *Sumo* culture has evolved, although the north coast probably had culture traits that differed significantly from those of the *Mosquito* and *Sumo*. It is impossible to describe the post-Conquest changes of the culture of the *Paya* and *Jicaque*. It seems reasonably certain, however, that during the past 400 years the east coast people and the people now known as the *Paya* and *Jicaque* have converged culturally. We can, then, describe these peoples as a unit, although hypothetically their cultures have developed out of the ruins of a more complex aboriginal
G background.
177 Less important but significant features of the culture may be ascribed
175 to the contact with the *Black Carib* Indians, who were brought to the Bay Islands in 1796 and whose descendants have settled on the mainland. The importance of the early Negro influence has already been noted.

CULTURE

SUBSISTENCE ACTIVITIES

M
241 **Farming.**—A type of slash-and-burn agriculture is employed by all tribes. Every season the men clear new farmlands and burn the slash. Planting and cultivating is done with a digging stick. This is woman's work, except among the *Jicaque* (Von Hagen, 1943), and the women also harvest the crops. Some fields have combinations of crops, such as maize, beans, and peanuts; others are reserved for single crops, especially the tubers.

G A list of agricultural products may be found below. Sweet manioc,
[241 an important *Mosquito* crop, is grown by all tribes. Bitter manioc, prob-
177] ably introduced by the *Carib*, is important to some *Paya* and *Jicaque*.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

The solution of ethnological problems by the helminthological approach is not without its difficulties and as such is beyond the scope of this report. On the basis of Sandground's data the prevailing hookworm infection among pure blooded Indians should be *Ancylostoma duodenale* but where Negroes have settled and intermingled the infestation becomes dominantly *Necator americanus*. In the Coco Basis, where hookworms were introduced primarily by negroes, the infestation, as far as our observations permitted, was that of *N. americanus*.

It is of interest to note that onchocerciasis was not found in the Coco Basin even though the writer thought he had found two patients with this disease. The biopsy material was poorly prepared and there was some question as to the identity of the filarial worms. That the diagnosis was probably erroneous was further strengthened by the fact that *Simulium* flies transmitting this disease were not seen. However, the limited observations in searching for the fly were by no means thorough and do not exclude the possibility of their existence or that of the disease. It may be that in years to come when commerce between natives is increased the appearance of onchocerciasis may become an obvious clinical finding.

Cases of Schistosomiasis have been reported from Panama, Costa Rica and Yucatán but none have been reported from Guatemala[70] nor were we able to find any in Central Nicaragua. Even though *S. mansoni* and *S. hematobium* are of Ethiopian origin, the appearance of negroes in the Coco Basin did not introduce the disease and this fact is ascribed to the absence of the species of snails suitable for the larval development of the parasite.

The commonest worm infestations in the Indians of the Coco Basin were *Ascaris lumbricoides* and *Trichuris trichiura*. The former was common in communities which do not possess sanitary facilities and is contracted by ingesting eggs that are expelled in the feces. The latter, "whip worms", whose eggs are able to withstand adverse environmental conditions, almost to the same extent as those of Ascaris, was commoner than the former and the "pinworm" *Enterobius vermicularis* was frequently found. *T. saginata* and *T. solium* have been noted by others in the area studied but were not observed by us.

[70] Sandground, J. H. Helminthic infections in Guatemala in a Medical Survey of Guatemala, Carnegie Institution of Washington, 1938.

3: Pijoan D-5 (ca. 1945) 1946
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them.[77] Sporadic epidemics of whooping cough have occurred in the Coco Basin and have always continued with considerable severity. Thousands of deaths from whooping cough were reported to the League of Nations in 1933 and 1934.[78] In the Coco Basin the children in a few villages have come down with this disease but because of the wide gaps between villages it has never spread entirely throughout the area. In short, the epidemics appear to become localized and have within the last 50 years decreased considerably in number. Thus, it can be said that considerable morbidity and mortality for whooping cough does occur at intervals of them but are localized in character.

Diphtheria

Diphtheria appears to be a relatively rare disease in the tropics; for instance, in the non-tropic areas such as Buenos Aires, the incidence per 100,000 persons was in 1929, 16.9; in Quebec, 23, and in Chicago in 1927, 13.8. In the tropic area in 1927 for Havana was 1.5; in 1928, 2.0; Guayaquil in 1930, 0.8; Veracruz in 1930, none; in Kingston in 1927-1929, none. Further north in Tampico the incidence was in 1930, 6.0; and in the Panama Zone in 1928, 9.9. Larsen[79] states that in the tropics diphtheria is a mild, seldom seen disease and rarely assumes epidemic proportions. This is of interest since Emerson[80] has shown that there is a significant difference in the cause and death incidence rates of diphtheria in various racial groups in New York City and he believes that the factor of race is the only one of importance which can be recognized. Be this as it may, the fact remains that today no case of diphtheria has been reported in the Coco Basin territory. This does not mean, however, that mild cases have not occurred since the disease might have been mistaken, if mild, for any of the upper respiratory diseases.

Pneumonia and Bronchial Pneumonia

At the time of our expedition through the Coco Basin we did not hear or not did we see any cases of pneumonia; however, we were in-

[77] Cann, Thomas, In an unknown land. 1924, New York.

[78] League of Nations Health Organization. Annual Epidemiological Reports, Geneva. For the year 1933, published in 1935; for the year 1934, published in 1936.

[79] Larsen, A. E. Variation of cosmopolitan diseases in tropical and temperate zones. Amer. Jour. Trop. Med., 1936, *16*, 91.

[80] Emerson, K. Future of program for tuberculosis control. Amer. Jour. Public Health. 1935, *25*, 707-711.

3: Pijoan D-5 (ca. 1945) 1946
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164 formed that pneumonia and bronchial pneumonia did exist and that at
171 certain times the disease would occur especially among infants with a very high morbidity and mortality. Pneumonia is however more common in the highland tropics. For instance, in Guatemala, where the incidence is equal to that of México, it is more than double than that for Massachusetts. The disease in the Coco Basin is not of paramount importance nor is it a public health problem. No statistics are available so that a proper description of this disease can not be given.

Tuberculosis

Hrdlicka[81] has said of pulmonary tuberculosis in Indian tribes that "this disease which in all probability is extremely rare, if it exists at all, in the prehistoric Indians, was seldom seen before a century ago (before 1808) and is gradually becoming everywhere more common". His observations indicated further that pulmonary tuberculosis in the Indian is usually fatal within a comparative short time.

But it has been noted[82] for instance in Guatemala that tuberculosis is an important cause of death in the larger cities; it is not prevalent in small communities. The real question, as raised by Shattuck, is does tuberculosis treaten to become a major problem in Central America. If so, little has been done to combat the disease in this area. Yudice[82] applied tuberculin tests to 447 children in El Salvador and found the Pirquet test positive in 47 per cent of the subjects (children 3 to 14 years old), and those in whom it was doubtful or negative gave 21 per cent positive Mantoux tests. In the reports dealing with North American Indians, Crouch[83] found 75 per cent positive among Indians of Montana and Coleman[84] stressed the view that Navajo Indians had practically no immunity to the disease. The factors involved appear to be those of racial susceptibility, poor food, bad hygiene, and the lack of treatment of contributing causes.

164 Although we were not able to secure the incidence of pulmonary tuberculosis among the Miskito Indians, two facts seeemed apparent. The first of these was that fever, cachexia, hemoptysis symptoms which developed rapidly and often terminated in death were common in the younger Indians who worked in mines. The other fact is that such

[81] Hrdlicka, Ales. Smithsonian Inst. Bur. Amer. Ethnol. 1909, Bull. 42.
[82] Yudice, Luis. Salv. Med., 217, ab. 1936. (Abstract in Bol. de la Oficina Sanitaria Pan-american, Sept. 1936, 883.)
[83] Crouch, J. H. U. S. Public Health Reports, 1932, 47, N° 38, 1907.
[84] Coleman, Nancy R. The Reservation Boarding Schools, Bull. 25, (Nov 1936), Natl. Assoc. on Indian Affairs, Inc., New York.

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Combined results of the malarial survey at Saulpaca (Zapuca) and San Carlos 164

Age	*Total N° of Persons*	*Spleen examination Positive Splenomegaly*		*Positive Blood smear for parasites*	
Years		*Saulpaca*	*San Carlos*	*Saulpaca*	*San Carlos*
0-1	40	0	11	6	10
2-4	46	2	15	13	17
5-9	128	3	52	46	55
10-14	80	2	34	27	36
15-19	41	2	18	14	20
50-54	34	0	8	8	9

the proximity of Bilwas Karma where certain public health measures have been introduced to expect a decreased incidence of disease. However the problem of clinical malaria remains a challenge and suppressive measures with atabrine or similar drugs may do much for these communities; the use of effective insect control with modern insecticides may play a major role in the future village control of insect borne disease. From the values given in the examination for malaria it is obvious that the disease constitutes the mayor health problem of the area. At Waspam, Bilwas Karma, the following mosquitoes were collected by [136] our party, these were: *Anopheles albimanus, A. albitarsis, A. aquasalis, A. argyritaris, A. parapunctipennis, A. pseudopunctipennis,* (several varieties), *A. vestitipennis, and A. crucians* (reported to be collected by Kumm). *A. albimanus* was found in great numbers and is probably the principal transmitter of malaria. This species is found in humid tropical climates and its breeding places are in the swamps exposed to the sun. However it has been known to exist at altitudes of 1350 meters (Guatemala City) and is the most common vector.

Syphilis

Hrdlicka[89] has pointed out that there is no substantial evidence 164 of precolumbian syphilis. On the other hand Williams and Wakefield, 114 Dellinger and Camp[90] regard the conclusions of their studies as being 171 sufficient to substantiate the view that syphilis was endemic in North America prior to European contacts. Regardless of controversy, sy-

[89] Hrdlicka, A. Disease, medicine and surgery among American aborigines (Gen. M. Kober Lecture). Jour. Amer. Med. Assoc. 1932, 99, 1661.

[90] Wakefield, E. G. Dellinger, S. C. and Camp, J. D., Study of osseous remains of "mound builders" of eastern Arkansas. Amer. Jour. Med. Sciences, 1937, 193, 448.

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164 philis, today among Indians, is a disease that deserves further study.
114 Dr. Mitchell Frank[91] has repeatedly stated that many cases with posi-
171 tive serologic evidence do not show clinical manifestations of syphilis nor is there anything which could be construed to indicate syphilis in the history. He points out furthermore that some of these cases on treatment have changes in serological findings but others do not. He has endeavored to perform all of precipitation — flocculation was well as the modifications of the Wasserman reactions and he is not satisfied with the status of this subject among Indians. Lynwalter[92] in 1923, in a study of Pueblo Indians found that 31 per cent had serologic evidence of syphilis and Dr. Frank does not believe that all these subjects were endowed with the disease. Plant[93] in South Dakota found serologic positives in Indians in 10.9 per cent of the men and 7.3 per cent of the women; Clarke[94] in New Mexico showed a serologic case rate of 1.5 for Indian males and 2.3 for Indian females: Dunham, Aberle, Farquhar and D'Amico[95] stated that positive serologic evidence was present in 2 per cent of the Indian children; Mountin and Townsend[96] report on incidence of 6.6 per cent among Indians studies. Pierce[97] has stated that there is something peculiar to the results obtained with precipitation flocculation tests among Indians and that the Wasserman reaction may be involved as well. Other considerations are the changing nature of the disease itself as exists over a period of years within a community and the effects of interracial marriages.

With regard to syphilis in Central Nicaragua, Rosenfeld[90] in his report stated "syphilis too is apparently very prevalent, several cases suggesting congenital and central nervous infections having been observed". It was, however, our impression that syphilis when present existed only in certain communities and rarely in others. Although there was no opportunity to perform routine serological testing, the clinical evidence of the disease was rare in all of the small

[91] Frank, Mitchell, Senior Physician, United Pueblos Agency, 1943, personal communication.

[92] From the Office of Indian Affairs, Washington, D. C. 1923.

[93] Plant, F. Paralysestudien bei Negern u. Indianern. 1926, Berlin.

[94] Clarke, W. Sangre impura in Mora: study of syphilis and certain other diseases in population of Mora County, New Mexico. Ann. of Int. Med. 1934, 7, 1936.

[95] Dunham, E. C., Aberle, S. D., Farquhar, L. and D'Amico, M. Physical status of 219 Pueblo Indian children. Amer. Jour. Dis. Children, 1937, 53, 739-49.

[96] Mountin, J. W., and Townsend, J. G. Treas. Dept. Pub. Health Service Bull. 1936, Bull. 223 (Feb).

[97] Pierce, L. F. Personal communication, 1943.

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villages on the Coco River. In and around Waspam, San Carlos, and Bilwas Karma several cases were seen which appeared to have the stigmata of the disease. Dr. Daniel F. Molloy of the Rockefeller Foundation once informed Dr. George Shattuck [82] that yaws in Honduras and in Nicaragua occurred in "nests". It was our impression that the same can be said for syphilis. Several cases were seen in and about Bilwas that were being treated and although the disease does not present itself as a major Public Health problem within the Coco Basin it is important that it be treated since there is every likelihood that it will spread.

164 114 171

Yaws

Yaws is a common disease in the tropic regions of Central America and it is often seen in the subjects of the Coco Basin. There appears to be some evidence that Yaws was an ancient disease in the Americas. Hirsch [72] and Shattuck [82] agree that yaws was an importation from Africa. In a survey of a hundred patients as San Carlos nine of them yaws, three of the subjects were boys between the ages of 10 and 18 who had the typical secondary eruption of yaws. The other six patients had a mixture of annular tertiary lesions and chronic eruptions. Treponema was demonstrated in four of the patients. Although no formal survey was undertaken, Dr. Thaeler and others[99] had the impression that the disease was common in the area. The treatment of the subjects with mapharsen and bismuth salicylate results in a dramatic response, and at the end of the third weekly injection most of the lesions had disappeared. It would appear to us that a definite program could be established with regard to the treatment of yaws wherein a sustained effort in a field project coud accomplish the treatment of the majority of the cases within a short period of time. Thus a team could enter into a territory and make a definite tour with a view of treating yaws. Although the disease would probably not be eliminated by such a measure it would no doubt be suppressed in its spread to a where it might considered a minor public health problem.

164 [757]

Pinto

The disease pinta is characterized by changes in pigmentation as a result of *Treponema Carateum* infection. Is is presumed to be of

[99] Rosenfeld, L. in his survey of March, 1943 found among 200 subjects at Raití and San Carlos, 26 of them with yaws and 18 of them with Pinta and 2 with both diseases combined.

1: Conzemius M-4, 5 (1921) 1932
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412 companion at work and on voyage, and the main tool in house, garden, field, and bush. The Indian uses it to dig postholes for his house, to cut down small trees, shrubs, lianas, grass, or weeds. With the machete he cuts down the underbrush when making a plantation and clears the latter from time to time of weeds and young bush. With the machete he also defends himself against wild animals, snakes, and the like, and, if necessary, against his own kind, which is often more dangerous than the wild beasts of the forest.

[934] Formerly all the machetes used on the Mosquito Coast were imported from England, but in later years they were brought from the United States and from Germany.

412 313 AXES.—The Indians are very good at plying the ax (M.: *asa*, from the Spanish "hacha"; S.: *ki*, *kidak*), as many of them have been working at the mahogany camps. The export of this valuable wood has been going on with various long interruptions for over two centuries. Even the women handle the ax fairly well, and cut up small tree stems to be used as firewood. The rectangular-shaped so-called American felling axes or Canada wedge axes are preferred by these Indians; in shape they resemble somewhat the *tuba* fish, and for that reason the Miskito call them *tub'asa*.

412 ●172 STONE AXES.—Single or double bladed stone axes or celts (M.: *ahwani mahbra*, *imyula mahbra*; S.: *ahwana suma*, lit.: "thunder egg" or "lightning egg") have been unearthed in various parts of the country. They are grooved or ungrooved, and were firmly fixed in the thick part of a stone-cut wooden handle, or the handle was merely tied firmly to the ax with the aid of a withe passing around the groove. Some of these celts were provided with a short handle cut of the same solid rock. Dampier (I, 85) mentions some good grooved axes among the Indians of Rio Escondido (Kukra-Sumu), which were "flat and sharp at both ends," and were 10 inches long, 4 inches broad, and 3 inches thick in the middle.

Two simple stone axes from the Mosquito Coast have been depicted by Bovallius (II, 299, figs. 81, 82). Three fine monolithic axes from the Bluefields region have been described and illustrated by Saville (b: 34–36, fig. 15). The blade of these axes is of a form foreign to Central America, resembling certain axes from the Lesser Antilles and northern South America. In these three specimens the rounded handle, which has a length of 12 to 12½ inches, is slightly curved. They are respectively in the Museum of the American Indian, Heye Foundation (a), the Peabody Museum of Harvard University (b), and the United States National Museum (c). The first one of them (a) was acquired in 1924 in Nicaragua by Mr. D. E. Harrower. The blade is comparatively longer than in the other axes of this type and the handle is elaborately finished, being decorated with three series of longitudinal grooves. The second ax (b) is carved from a

1: Conzemius M-4, 5 (1921) 1932
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heavy, compact, brownish-green stone with decorations somewhat similar to the preceding one, but the handle has, besides, three transverse oval decorations over the section adjacent to the blade. The third specimen was collected by Mr. J. O. Thomas of Bluefields. It is plain and made of indurated volcanic tufa. The two last-mentioned axes (b and c) have already been described and pictured in a previous publication by Saville (a: 10–11, pl. v, Nos. 5 and 4). Another beautiful ax, perhaps of the same type, with blade and handle carved of one piece of heavy, compact, light-colored rock, was unearthed at Bluefields in 1849 and is now in the Museum of the Moravian Mission at Herrnhut in Saxony.[28]

A beautifully shaped double-bladed stone ax was obtained by Boyle in 1866 on the upper Rio Escondido and pictured by him (b: II, 144, fig. 1); it is now in the British Museum. It is apparently of volcanic stone and is 17¾ inches long and 12¾ inches wide across the blades. The end of the flat handle is perforated. The illustration has been copied by Bancroft (IV, 59, fig. 3) and by Joyce (18, pl. I, fig. 1). Saville (a: 11–12, pl. VI, fig. 1) describes and illustrates this ax together with two other double-bladed specimens from the Atlantic coast of Nicaragua, which are fashioned from an igneous rock, possibly diorite. These two were obtained from a Miskito chief by Mr. J. O. Thomas of Bluefields and are now in the United States National Museum. The largest one of them (Saville, a: 12, pl. VI, fig. 5) is 10¾ inches long and 6¼ inches across the blades; the handle is rounded and has a conical end. The other specimen (pl. VI, fig. 2) is only 8½ inches in length and 7¾ inches wide across the blades. Like that illustrated by Boyle, it is perforated through the end of the flat handle. Other stone axes from the Mosquito Coast are in the collection of Doctor Heuhaus in the Museum für Völkerkunde in Berlin (Lehmann, b: 715).

The modern Indians do not know that these stone axes are artificial and that they are the work of their forefathers. They believe them to be "thunder-bolts," as do also the Creoles and Negroes; the same idea is also entertained by the Ladinos, who call these celts "piedra de raya." It is very probable that these antique axes were also used as defensive weapons in former days, and perhaps also for ceremonial uses.

ADZES.—Adzes are now very common and are used for the making of canoes and other objects of wood; they are used in similar manner as those of our joiners and carpenters. This tool is probably of post-Columbian origin, although the Sumu have a native name (*parin*) for it; the Miskitu call it *ats* from the English name. Stone adzes have never been found on the Mosquito Coast, although they are frequently

[28] Cf. Frederick Starr in Internationales Archiv für Ethnographie, Leiden, vol. v, 1892, pp. 88–89.

1: Conzemius M-4, 5 (1921) 1932
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this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-siksa;*[a] T., P.: *pransa, paransa;* U.: *ki-tisna*).

ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[a] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cuabul" (=*kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *sikes* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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short distance from a small creek. A picture of one of these sites is given by Spinden (536). Occasionally these antiguales are surrounded by low walls, perhaps remains of former fortifications; others again were apparently defended by ditches and perhaps by palisades also.

ANCIENT METATES.—The metates found in these deposits are supported by three long, well-centered legs, which are generally covered with geometric designs; in front there is a bird or animal head (eagle, turtle, alligator, or jaguar). The Indians occasionally dig them up to be used in their households. Some fine specimens have been broken by man or by falling trees. Giant metates, which may reach over 6 feet in length, are still found, but the sculptured head has generally been removed from them. They remind us of the wooden stools still found in the Indian dwellings and it is very likely that they were used as ceremonial seats. In the Museum of the American Indian, Heye Foundation, there is a metate from the Mosquito Coast (Hodge: 56). Several large specimens from an important site discovered near Cuera Hill (to the south of Pearl Lagoon) about 30 years ago upon clearing the land for making banana plantations are in the American Museum of Natural History. The Peabody Museum of Harvard University also owns a few metates from the vicinity of Bluefields.

ANCIENT BOWLS.—Cylindrical bowls with three short legs and made from a very hard granitelike rock are also found in the above-mentioned old sites, but they are less common than the metates. Two knobs near the rim, carved into bird or animal heads, serve as handles. These bowls or vases are ornamented with geometric motives, of which the most common is the incised guilloche, or rope pattern, of either curvilinear or angular construction.

The first description, accompanied with illustrations, of these "granite vases" from the Mosquito Coast is given by Pownall (318–324, pl. XXVI), who figures three of these objects. Two of these belonged to Lord Hillsborough. One of these latter (No. 1) is very small and has an animal head on one side. The larger one (No. 2) is more interesting; it is about 12 to 15 inches in diameter and 10 inches in height, with plain legs. There are two rows of diamond-shaped ornaments on the body of the vessel; the two handles take the form of a head and a tail, but the head is partly broken off. The third vessel (No. 3) is about 10 to 12 inches in diameter and height, but at the top it is somewhat narrower; it has carved legs and two head ornaments and is perhaps the best specimen in good condition found in the country. The bowls No. 2 and No. 3 have been reproduced by Humboldt (I, p. 238, and II, pl. 39) and by Dupaix (I, div. II, 27–28, and II, suppl. pl. VII, No. 1). The illustration of No. 3 has been copied also by Bancroft (IV, 26).

1: Conzemius M-4, 5 (1921) 1932
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Pownall (319) refers to another of these bowls in the British Museum, which belonged to a collection brought from Jamaica by Sir Hans Sloane. This is perhaps the one depicted by Joyce (p. 74, pl. VI, fig. 1) which resembles No. 3 described above.

In 1921 the writer found a number of these vessels, but all badly broken up, on the right bank of Rio Paulaya. Some of them were not detached from the quarry out of which they were formed. It is, however, not known from what site the marble was quarried. Bowls of similar material and technique have also been met with in the Bay Islands and in the valley of Rio Ulua. A large specimen is in the Museum of the American Indian, Heye Foundation (Hodge: 56).

STATUES OR CARVED PILLARS.—At certain old sites may be found some high slabs of stone which were originally placed upright, reminding one of our tombstones. Nearly all of them have now tumbled down. Occasionally some greatly obliterated geometric designs, or spirals, may be found on them.[28]

Spinden (539) pictures a stela or stone pillar on Rio Tocomacho (Honduras) which is 8 feet in height and nearly a foot square. It is covered on all sides with pictographic designs, chiefly spirals and scrolls; on one of the four faces there is a grotesque figure with a reptilelike creature on its head. Such stone pillars may also be found in other parts of the Mosquito Coast, but they are not common. Large stone statues, attaining as great a height as 12 feet, are, however, the outstanding feature of the archeology of the Pacific half of Nicaragua, especially of the great lake region.

Le Baron (217–222) describes and depicts some stone ruins from the left bank of Rio Prinsapolca, about 134 miles above its mouth. They consist of three monoliths, about 8 feet high, forming a triangle; the ground between them was paved with stones. These monoliths had fallen to the ground and were broken; on some of the faces there were rude carvings, greatly obliterated.

CARVED ROCKS

Pictographs may be found on the rocks in the bed of nearly all the larger streams, generally at the rapids and falls. They must have been made many centuries ago, for they are considerably waterworn, and often may be followed easier with the finger than with the naked eye. Many of these carved rocks are visible during the dry season only and are completely under water during the rainy months, owing to the rise of the rivers. (Fig. 1.)

WHERE THEY ARE FOUND.—Such carved rocks have been observed by the present writer at different places on the Rio Coco (at Wirapani,

[28] The modern Indians have no traditions concerning these ruins found in their territory, and ascribe them to the evil spirits.

1: Conzemius M-4, 5 (1921) 1932
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Waspuk, Kiwras, above Raiti, at Kunkun mawan and at Tawit); they are known to exist also in the rivers Plátano, Patuca, Wawa, Prinsapolca, Tuma, Punta Gorda, Indio, and Maíz. They appear to be particularly numerous on the Siquia and Mico, which two streams together form the Rio Escondido or Bluefields River (Boyle, b: I, 296–299; Pim and Seemann: 401; Wickham, b: 243, 245; Belt: 52–53). Some extravagant stories of great statues carved in human and animal shape and hewn out of a solid cliff on the upper Rio Mico have been circulating on the coast, but it appears that these giant statues are merely rude carvings on the rocks similar to the ones found in other parts of the country. Carved rocks are found in many rivers emptying into the Caribbean Sea, and a good account of those met with in South America has been given by Koch-Grünberg.* The geographical names Gualpulban (M.: *walpa-ulbas*), Quiulna (T., P.: *ki-ulna*) and Quiultan (U.: *ki-ultas*), which are found scattered in various parts of the Mosquito Coast, may furnish a clue to the presence of such pictographs in the neighborhood. These various names mean "written rock" or "painted rock" and correspond to the Spanish "piedra pintada."

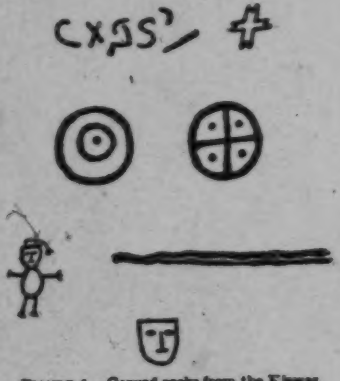

FIGURE 1.—Carved rocks from the Kirwas Rapids (Rio Coco)

MOTIFS.—The carvings consist chiefly of very curious figures, which it is often difficult to identify. Sometimes they represent human figures, but the greater part of them appear to be animal designs: jaguars, alligators, monkeys, frogs, tortoises and serpents. Occasionally geometric figures, as spirals and scrolls, are depicted, but floral designs are conspicuous by their absence. Sapper (a: 275) pictures some carved rocks from various parts of Rio Coco: Valpa tilpan (=Wirapani), Kiulna (=Kunkun mawan) and Davuit (=Tawit). A photograph of a large bowlder with carved figures from Rio Plátano is given by Spinden (537).

ARTISTS.—We do not know who were the authors of this work. The Miskito are by all means out of the question, for they are comparatively new immigrants into the regions where pictographs are to be found. They ascribe them to the Sumu, who formerly occupied most of the territory in question. But the latter Indians are unanimous in declaring that this work was done by the evil spirits (*walasa*) at a time when the rocks were still soft.

* Südamerikanische Felszeichnungen. Berlin, 1907.

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172 WRITING.—The carvings on one of the bowlders at the Kiwras Rapids on Rio Coco are said to resemble somewhat the characters of the Latin alphabet. Wickham (b: 245) heard of some "writing" on rocks of Rio Mico, which he considered—quite erroneously of course—inscriptions in Latin made by the early Jesuit missionaries. Neither Miskito nor Sumu appear to have possessed the art of writing as did their western neighbors, the Nicarao and Chorotega. According to Oviedo the two latter tribes had books of parchment made from deer skins. Picture writing was also practiced, and is still, by the Cuna Indians of Panama, as has recently been ascertained by Nordenskiöld.[36]

RUBBER COLLECTING

314
439 In former days the Indians used to collect rubber from a wild-growing tree (*Castilla* sp.), which is found nearly all over the country. This industry started about 1860, first on Rio San Juan, and gradually spread to the remainder of the Mosquito Coast. The Indians sold their rubber to the local merchants, who generally made large advances to them. About 1912 and 1913, when the export of rubber ceased, owing to the low price caused by the large production of plantation rubber in the British and Dutch East Indies, many Indians found themselves heavily in debt to the merchants.

314 The rubber collectors or "huleros" first made a rude ladder out of the lianas that hang from the trees; this was done by tying short pieces of wood across them with the aid of smaller lianas. Later iron spurs were introduced and attached to the feet to climb the trees. With the machete they then scored the bark with cuts having the shape of the letter V, the point being downward. Such cuts were made all the way up the trunk, at a distance of about 3 feet from each other; they extended nearly round the tree, but the latter was on no account to be completely girdled. At the bottom of these series of cuts a spout was inserted to conduct the latex juice into buckets or other containers. In about half an hour all the whitish milk had run out of the tree.

Afterwards the latex was strained and caused to coagulate by the addition of an alkaline decoction made from the juice of the chajmol vine (*Ipomoea bona-nox* L.; M.: *tatako;* T. and P.: *tutuk;* U.: *ulupuy*) or from that of a liana (*Calonyction speciosum*); this was combined with the latex in the proportion of 1 pint to 2 gallons. To prevent putrefaction coagulation must be effected within about 24 hours after the collection of the milk. The resulting mass was then made into round flat cakes, which were exported under the name "sheet rubber"

[36] Picture Writings and Other Documents. Comparative Ethnographical Studies, vol. 7, part 1 (1928) and part 2 (1930).

1: Conzemius M-4, 5 (1921) 1932
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the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many parts of the Mosquito Coast, chiefly in old burial grounds, indicate a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, probably the Sumu territory, the discovery of human heads, busts or entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dóh;* U.: *ani*), girdles or

1: Conzemius M-4, 5 (1921) 1932
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226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] 225 CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

● 172 A small bivalve mollusk, known locally as "cockle" (M. and S.: *dhi*), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjøkkenmødding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 777 FISHING CHARMS.—Certain charms are said to be very efficacious at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

1: Conzemius M-4, 5 (1921) 1932
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restricted to two subtribes thereof. Lehmann's classification of the Sumu tribes is likewise unsatisfactory. With the word "Sumu" we have a convenient name for the whole of these various dialects; its use will avoid the sad confusion met with still in the recent literature.

All the male Sumu either know Miskito or Spanish (or even both), depending upon their proximity to Miskito or Ladino settlements. A few of them know a little English. Hardly any of the women are, however, able to speak a foreign tongue. Through Miskito many corrupted English words have passed into their speech, while words borrowed from Spanish are not so common.

RELATIONSHIP OF THE MISKITO AND SUMU

The relationship of the Miskito with the Sumu has already been established from linguistic evidence (Lehmann, b: 714–720) and is reenforced by a survey of the ethnology of the two tribes. In this connection the following Sumu tradition, which points toward a common origin, will be interesting. It was recorded in 1904 at *Alami-kañban* (Rio Prinsapolca) from a Sumu named Frederick, by the Rev. G. R. Heath, a Moravian missionary, who resided many years on the Mosquito Coast. The latter communicated it to Lehmann, who published it in 1910 (b: 717–718). This version was later reproduced by Joyce (9–10) and by Alexander (185–186):

> At Kaunapa Hill, on the left bank of Rio Patuca, a few miles below the mouth of Rio Guampú, there is a rock bearing the sign of a human umbilical cord, and from which were born the tribal ancestors, a Great Father (*Mâi-sahana* "he who begot us")[3] and a Great Mother (*Itwana* or *Itoki*).[4] The Miskito and the Sumu are the descendants of these two primal ancestors.
>
> The first born were the Miskito who, disobedient and headstrong, as they are still to-day, cared little for the instructions of their ancestors and ran away to the seacoast.
>
> Then the Twahka or Tawahka were born, who consider themselves to this day the nobility among the Sumu.[5]
>
> Then followed the Yusku, who turned to evil ways; for that reason the other tribes made war upon them and almost exterminated them.
>
> The youngest, the Ulwa, being according to the Indian custom the favorites, profited to such an extent by the instructions of the tribal ancestors that they became especially skilled in the secrets of medicine and incantation and won the name of *Boa*, "enchanters."[6]

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[3] *Wan-bâikan* in the Miskito language.

[4] *Yapti-misri*, "Mother Scorpion," or *Yapti-tara*, "Great Mother," in the language of the Miskito.

[5] In Miskito the word *tawakya* means, however, "firstborn" and the parents thus call their first child.

[6] Lehmann (b: 717) says erroneously "Singers," and this error is copied by Joyce (10) and Alexander (185–186). According to my own informants the Boa were a subtribe of the Sumu differing from the Ulwa.

1: Conzemius M-4, 5 (1921) 1932
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Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[1]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (27). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Cassiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[1] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

1: Conzemius M-4, 5 (1921) 1932
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144 On the other hand, Santaella Melgarejo, in a report dated Guatemala, April 3, 1715 (Peralta, b: 78–80), states that the vessel in question was English and that it was wrecked in 1652 on the Cajones or Tiburones Keys to the east of Cabo Gracias a Dios. Fearing the Indians from the mainland, the Negroes settled at first at some keys south of the mentioned Cajones (undoubtedly the Mosquito Keys), and once friendly relations were established with the natives, they established themselves at Cabo Gracias a Dios.

Again it is said that the vessel in question was Spanish and bound for Cuba (Ravenead de Lussan: 437–438; Heath, a: 51).

Our source material pertaining to the origin of these slaves is therefore very meager and contradictory. According to a report of Fray Benito Garret y Arlové, dated November 30, 1711 (Peralta, b: 57), one of these Africans, an old man named Juan Ramón, who lived in Granada (Nicaragua) related that about one-third of his countrymen were captured by the Indians and reduced to slavery. The others took to the bush, whence they carried on a crude warfare with the aborigines, who were finally compelled to retreat toward the interior. About 1672 the number of these African slaves held by the Miskito was estimated at about 200; in those days they had already adopted the language and customs of the Indians (Exquemelin, Fr. ed.: II, 276–277).

As a result of the above, the Miskito from Cabo Gracias a Dios to Sandy Bay had already a large admixture of African blood toward the end of the seventeenth century. In the course of time refugee slaves from the English settlements and more recent immigration of Negroes and Mulattoes (chiefly from the West Indies) have contributed to the spreading of the African type, so that to-day Negro characteristics may be observed in almost every village. One of the subtribes of the Miskito, the *Tāwira* who live a short distance inland, from Sandy Bay to Wawa River, however, have refused to mingle their blood with that of the Africans. It is only in recent years that they have begun to intermarry with the mixed Miskito, especially with newcomers from Rio Coco, so that soon a Miskito of pure Indian blood will be a thing of the past.

197 We do not know to what extent these African slaves have influenced the original language of the Miskito, for such researches would entail exhaustive comparative studies with the surrounding Indian languages (Sumu, Paya, Rama), with the Creole dialects of the West Indies, and the languages of the Guinea Coast. The vowel scale is exactly the same as in the Jamaican Creole dialect; several of the peculiar phrases of everyday life are found literally translated into English in Jamaica (Heath, a: 51).

173 We are also indebted to Mr. Heath for a Miskito migration legend which is said to have been given out as authentic by Eduardo Pereira,

1: Conzemius M-4, 5 (1921) 1932
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a descendant of the Miskito royal family.[8] (Heath, a: 49; Lehmann, b: 715–716; Joyce: 8–9.) The present writer has, however, little faith in its exactitude, and such is also the opinion of the various older Indians he consulted about it.[9]

In former days the Miskito were called Kiribi [10] and lived on the narrow isthmus between Lake Nicaragua and the Pacific Ocean, a territory which the Nicarao occupied at the arrival of the Spaniards.

Late in the tenth century this country was invaded by a tribe of immigrants from the north (probably the Nicarao) and eventually, after a long struggle, the Miskito were compelled to leave their old home and retreat to the eastern shore of Lake Nicaragua. Here they resided for nearly a century, but finally, again under foreign pressure, this time exercised probably by the Sumu or Matagalpa, they migrated to the Atlantic shore. Believing that they had now found a safe home, they gave themselves the name of *Dis-kituna-nani*, "they who can not be dislodged," which was corrupted into Miskito.

At the time of their migration to the Atlantic their leader was a sort of culture hero, named *Wakna*, whose son *Lakyatara* "Evening Star" conquered the whole coast from Honduras to Costa Rica. While Wakna was still alive disputes arose among the Miskito chiefs. A rebellion, headed by *Wialandia*,[11] was defeated; its leader was imprisoned, and 300 of his partisans were executed.

PHYSIQUE: PERSONAL CHARACTERISTICS

GENERAL.—The Sumu differ naturally in many points in physique from the Negro-mixed Miskito, but there are also certain slight dissimilarities between them and the pure Miskito or *Tāwira*. The latter are, as a rule, well built and of middle height, whereas the Sumu are rather thickset and low in stature. According to Schultz (67) the Sumu from Rio Prinsapolca measure from 1.427 m. to 1.68 m. with 1.5816 m. as an average.[12]

Both tribes are sturdy, heavy muscled, proportionally broad shouldered, and have deep chests. The arms are well developed in comparison to the legs. As both of these tribes are essentially canoe men, passing most of their time in a cramped position in small boats, they lack the well-developed leg muscles of the "civilized" Indians of the interior.

COLOR.—The Sumu are of fairer complexion than all the other Indian tribes of this part of Central America, not excluding the so-called pure Miskito or Tāwira.

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[8] The father of Mr. Pereira was a Mexican; his mother was the daughter of a Scotchman named Haly and an Indian woman of the Miskito royal family.

[9] Pereira, besides, denies having given out this version, and claims to be in possession of the correct account.

[10] This name has an alluring similarity to Corobici, under which name the early Spanish historians of Central America mention an Indian tribe which lived formerly in northwestern Costa Rica to the south of Lake Nicaragua.

[11] Compare wasle "enemy" in the Miskito language.

[12] The anthropological measurements by Schultz, quoted in this study, were taken on 13 Sumu from Rio Prinsapolca and 25 Rama from Rama Key, all males.

2: Kirchhoff E-4 (no date) 1948
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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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1: Conzemius M-4, 5 (1921) 1932
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000 are somewhat quarrelsome, especially when they are under the influence of intoxicating drinks, but they are very hospitable and polite to strangers.

The creation of the mining and banana-raising industry has brought to the country an ever-increasing number of *North Americans* and *Europeans*. *Chinese* and *Syrians* are active as shopkeepers.

● 175 HISTORY.—Columbus discovered the country in 1502, during his fourth and last voyage to the New World, when he proceeded along the Atlantic coast of Central America from Trujillo in Honduras to Nombre de Dios in Panama. In the course of the following years several attempts were made by the Spaniards to take possession of the Mosquito Coast, but the natives resisted and were able to maintain their independence. The Spaniards were chiefly in quest of loot, and as the Indians gave them much trouble, and no gold was found in their country, they centered their energies upon the Pacific coast.

Later the English from Jamaica entered into friendly and commercial relations with the Miskito Indians, and gradually established a protectorate over the country. British traders arrived frequently on the coast, and later garrisons were introduced from Jamaica.

In 1786, by virtue of a treaty celebrated with Spain, Great Britain agreed to evacuate the country, and to recognize the sovereignty of the King of Spain over it. But the Spaniards were unable to maintain a foothold there, owing to the hostilities of the Indians worked up by a number of the English settlers who had refused to leave the coast.

Spanish power in America was already on the decline in those days and in 1821 the States of Central America declared their independence. Gradually the English authorities from Jamaica renewed their old friendly relations with the Miskito. The son of one of the principal chiefs was crowned solemnly at Belize (British Honduras) and the protectorate was reestablished.

The Mosquito Kingdom or Kingdom of Mosquitia was claimed in those days by the English to include the whole Atlantic coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, that is a coast line of about 700 miles. The western limit was not well defined, but was said to be formed by the first Spanish settlements in the interior. The Corn Islands and the numerous smaller islands and keys, situated off the coast, were also under the jurisdiction of the Mosquito King. The larger islands, Providencia, Santa Catalina, and San Andreas, were administered, however, by the authorities of Nueva Granada (Colombia), although they belong geographically to the Mosquito Coast.

In 1847 the claims of the British were limited to the territory between Cabo Honduras and Rio San Juan, and over this region the King, or rather his British advisers, exercised jurisdiction until 1860. The boundaries between the Mosquito Coast and the Republics of

1: Conzemius M-4, 5 (1921) 1932
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Honduras and Nicaragua had never been fixed; the two last named never recognized the existence of a Mosquito nation, but their effective jurisdiction did not extend to the east of an irregular line reaching from the eighty-third to the eighty-sixth degree west of Greenwich.

In those days the project of an interoceanic canal through the Isthmus of Nicaragua was occupying the principal maritime nations of Europe and the United States as well. The latter country had never viewed with favor the continual encroachments of Great Britain upon Central America. But when the English in 1848 took forceful possession of San Juan del Norte, the Atlantic terminus of the projected canal, the North American Republic openly took sides with Honduras and Nicaragua. Pressure from the United States forced England to sign in 1859 and 1860 treaties with Honduras and Nicaragua, by virtue of which the Mosquito Coast was recognized as part of the two Central American republics.

The part of the country situated between Rio Hueso on the north and Rio Punta Gorda on the south and extending inland to 84° 15′ W., was, however, made into a reservation wherein the aborigines were to be allowed a certain autonomy. At the head of this reservation was the King, whose title was now changed to that of "Chief" (*Jefe*).

Most of the Indians, Miskito as well as Sumu, were not living within the boundaries of this newly created territory. The government of the latter was chiefly in the hands of native English-speaking "Creoles" or Jamaican immigrants. These were strongly opposed to Nicaraguan influence. The authorities of the reservation were constantly at odds with those of Managua, and the sovereignty of the Republic was only nominal. In 1881 some of the arising disputes were submitted for arbitration to the Emperor of Austria. Finally in 1894 Zelaya, President of Nicaragua, forcefully took possession of the Mosquito Reservation and ousted the local authorities; the country was then incorporated in the Republic as the *Departamento de Zelaya* (now *Departamento de Bluefields*).

SHORT ACCOUNT OF THE ETHNOGRAPHICAL EXPLORATION OF THE MOSQUITO COAST.—Columbus sailed along the Mosquito Coast from north to south in 1502, but he appears not to have come in contact with either Miskito or Sumu. Between the years 1513 and 1529 the versatile historiographer of the Indies, Gonzalo Fernández de Oviedo (1478–1557), spent some time on the Pacific coast of Nicaragua. His great work, which was not published completely until 1851–1855, deals, however, almost exclusively with the Nicarao and Chorotega as far as Nicaragua is concerned, and only a few vague statements refer to the "Chontales," a general designation under which the primitive tribes of the Atlantic coast were known in those days. Benzoni, Castañeda, Andagoya, García Palacios, and Motolinia all personally

1: Conzemius M-4, 5 (1921) 1932
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visited Nicaragua or Honduras, but the rude Atlantic tribes were entirely ignored by them, just as they were by the other celebrated chroniclers, Gómara, Herrera, and Torquemada.

A few ethnographical details pertaining to the Indians of Rio Patuca (Sumu or Paya) have been left by the Franciscan missionary Espino, who remained in that region from May, 1667, until the beginning of 1668.

The author of the first famous work on the buccaneers, A. O. Exquemelin (name corrupted by the English into Esquemeling and by the French into Oexmelin), who came as an engagé to the West Indies in 1666, visited the Mosquito Coast in 1671 or 1672. He had joined the buccaneers in those days and among them appears to have performed the functions of barber-surgeon. In this capacity he accompanied Morgan on his famous raid on Panama in 1671. From the latter place his vessel sailed northward along the Atlantic shore of Central America, stopping at Bluefields Lagoon where the buccaneers were attacked by Sumu Indians. The vessel then stopped for some time at Cabo Gracias. Exquemelin's work was published in Dutch in Amsterdam in 1678. It was translated in German (1679), Spanish (1681), English (1684), and French (1686). Numerous editions have appeared since in many languages, and the book forms the basis of practically all the popular accounts of the seventeenth century buccaneer captains. The translations have appeared with serious additions, omissions, and alterations, each translator having been endeavoring to present his own country in the most advantageous light. The French translations especially contain additions of other French buccaneers not mentioned in the Dutch original, while the English editions glorify particularly the sack of Panama by Morgan. Exquemelin's work gives some very interesting accounts regarding the Miskito of Cabo Gracias a Dios.

The famous English navigator, William Dampier, who was born in 1652 as the son of a Somersetshire farmer, sailed to the West Indies in his youth. From 1675 to 1678 he was active as logwood cutter in Campeche and in 1680 he joined the buccaneers. In later years Dampier became very celebrated. On board a buccaneer vessel he visited Bluefields Lagoon and the Corn Islands, which enabled him to give us a few ethnographical details regarding the aborigines (Sumu) of those parts and the Miskito of Cabo Gracias a Dios. Dampier's great work, A New Voyage Round the World, which appeared in London in 1697, had a tremendous success and within a few years a great number of editions appeared in English, French, German, Dutch, and other languages.

The Parisian buccaneer, Raveneau de Lussan, a well-educated nobleman, who joined the buccaneers at Santo Domingo in 1684, is the author of a book (Journal du Voyage, etc., Paris, 1689) on the exploits

1: Conzemius M-4, 5 (1921) 1932
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of the French and English adventurers in the Pacific Ocean from March, 1685, to December, 1687. Being pursued by superior Spanish forces, these buccaneers abandoned their vessel in the Gulf of Fonseca and walked to the upper course of Rio Coco, down which they descended in rafts to the Miskito settlements around Cabo Gracias a Dios.

The great naturalist, Sir Hans Sloane, has also left us a few details pertaining to the Miskito whom he had met in Jamaica. On the arrival of each new governor of that island the Miskito King came over to Jamaica with a number of his men, as he had a commission from the governor. Sloane had thus occasion to meet these Indians in 1688 and again in 1725.

But the most detailed account of the aborigines of the Mosquito Coast, written in early days, is that of an Englishman, probably a former buccaneer, who signs merely "M. W." (The Mosqueto Indian and His Golden River). He had an intimate knowledge of the Miskito and also gives some details pertaining to the Sumu.

Over 100 years passed until another careful observer has left us an account of the Indian tribes under consideration. Orlando W. Roberts was active as a trader on the eastern coast of Central America from the Gulf of Darien to the Bay of Honduras (1816–1823). He refers chiefly to the tribe of the Miskito.

During the years 1839 to 1842 Thomas Young was living around Rio Tinto. He was deputy superintendent of the British Central America Land Co., which was endeavoring to colonize that part of the Mosquito Coast. Young had an intimate knowledge of the various tribes of Indians as they really were in those days.

From June to August, 1844, a commission of three Germans (Messrs. Fellechner, Müller and Hesse) was looking over the coastal region of Honduras between Cabo Gracias a Dios and Rio Patuca in order to determine the advisability of establishing a German colony there.

Another German, Julius Fröbel, who was compelled to leave his native country as a result of the political events of 1848, spent some time in 1850 and 1851 around the great lake region of Nicaragua and on the upper Rio Escondido among the Ulwa Indians.

For much valuable information pertaining to the Miskito and Sumu we are indebted to three Englishmen who came to the country in the following years. The most important one among them is Charles Bell, who lived in the country during his youth, from 1846 to 1862, his father being attached to the government of the "Kingdom." He had a very intimate knowledge of that part of the country situated to the south of Rio Coco. Between 1863 and 1868 John Collinson, a civil engineer, made two voyages to the Mosquito Coast, being employed by Commander Pim to survey from Lake Nicaragua

1: Conzemius M-4, 5 (1921) 1932.
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to Punta Gorda for a proposed railway. The naturalist H. A. Wickham lived in Nicaragua (Rio Escondido and Pearl Lagoon) from October, 1867, to June, 1868, in order to collect birds. His ethnographical notes pertaining to the Ulwa are of great interest.

A few years later the French mining engineer, Paul Lévy, traveled on the Mosquito Coast to carry on researches for the Government of Nicaragua. Among the minor contributors to the ethnology of the Mosquito Coast of the nineteenth century are the following: Bovallius, the Swedish zoologist (1881–1883); K. von Girsewald (1892), who spent six months in the gold regions of Pispis; Bruno Mierisch, the government engineer of Nicaragua, who explored the gold regions between Rio Coco and Rio Grande in 1892 and 1893.

In 1900 the celebrated German traveler, Dr. Karl Sapper, who is intimately acquainted with Central America, visited the Miskito and the Sumu living on and about Rio Bo[illegible]. The ethnographical specimens collected by him are in the Stuttg[illegible]m. A collection of ethnographical and archeological materi[illegible] obtained by Doctor Neuhaus around Rio Escondido about this same period is in the Museum für Völkerkunde (Berlin). The German linguist, Walter Lehmann, also investigated these tribes in the course of his voyage to Central America (1907–1909), but unfortunately the ethnographical part of his studies has not yet appeared. The Honduran schoolteacher, Francisco Martínez, also collected interesting ethnological data during his stay at the Sumu village Guampú on Rio Patuca (1916–17). Unfortunately his various contributions have all appeared in local newspapers and reviews of very difficult access.

Finally mention must also be made of the work done by several Moravian missionaries, especially Heath, Grossmann, Reichel, Martin, Ziock, and Siebörger. The books by Schneider and Brindeau are based nearly exclusively upon the investigations of these missionaries.

Since the war the work has been continued by Americans. H. J. Spinden visited Rio Coco and the coast of Nicaragua in 1917–18, and the coast of Honduras in 1923. Dr. A. H. Schultz, of the Johns Hopkins Medical School, carried on some anthropological studies on the Atlantic coast of Nicaragua, examining 25 Rama and 12 Sumu Indians. During the same year (1924) D. E. Harrower, of the Museum of the American Indian, Heye Foundation, was collecting ethnological specimens during two months among the Miskito, Sumu, and Rama.

GENERAL REMARKS ON THE MISKITO

The Miskito are estimated at about 15,000, which number exceeds that of all the other Indian tribes of the Mosquito Coast combined. They are largely mixed with Negroes, for which reason the Spaniards have called them "Zambos," meaning Negro and Indian half-breed, a name which is appropriate.

1: Conzemius M-4, 5 (1921) 1932
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411 used for fishing, consists merely of a shaft of wild cane into which a sharply pointed foreshaft of pejivalle wood, hardened in the fire, has been inserted and firmly tied as stated above. The latter is smoothed with the aid of a machete or large knife, which tools are used after the manner of a carpenter's plane. This kind of arrow is the largest one found on the Mosquito Coast, and it may reach 6 feet in length. Occasionally it is jagged on either side into more or less definite barbs. The arrow does not sink, owing to the feather-light shaft, which will always rise to the surface. On the Mosquito Coast the use of this arrow has also spread to some of the Creoles and Ladinos.

HUNTING ARROWS.—The hunting arrow (M.: *trisba;* S.: *sibak*) measures only 5 feet in length, as the shaft of wild cane is considerably shorter than in the one used for fishing. Unlike the latter, the hardwood foreshaft is not pointed, but a piece of iron or steel made from barrel hoops or other scrap iron is inserted in front. The latter is lanceolate in shape and has sharp edges. As the art of melting metal is unknown to these Indians, they make these arrow points with the aid of files. According to Exquemelin (Engl. edit.: 251), the Miskito in 1671 used iron points or alligator teeth to tip their arrows. Flint, obsidian, turtle shell, sharp fishbone, and shark teeth [47] were also used for this purpose in former days. Barbed arrows and trident or composite arrow heads are now unknown.

BIRD ARROWS.—For birds and small animals the Indians make use of small arrows with blunt knobs of hardwood or beeswax, called *uru* by the Miskito and *ubo* or *ubur* by the Sumu. With these arrows they seldom kill, but merely stun the game, so that they can capture it alive. They are also used in the houses to scare away dogs, pigs, and fowls without being compelled to get up from the seat.

QUIVERS.—Quivers (M.: *trisba taya* "arrow skin") were apparently of ceremonial use only, and they were employed to carry the arrows during the festivals. They were made of red deerskin, as is indicated by their Sumu name (T.: *sana untak;* P.: *sana onitak;* U.: *sana okatak*). At the present time quivers have disappeared entirely, and the arrows are always carried in the hand by the hunter.

FIREARMS.—The buccaneers of the latter half of the seventeenth century apparently introduced firearms among the Miskito.[48] In

171 [47] The Rama still employ shark teeth to tip their hunting arrows, and they claim that a wound caused with such an arm will almost invariably be fatal.

175 [48] It is possible that firearms were already introduced among the Miskito at an earlier period, during the years 1630 to 1641, when the two islands of Providencia and Santa Catalina, situated off the Mosquito Coast, and now belonging to Colombia, were colonized by English Puritans. The latter opened friendly and commercial relations with the Miskito, who were living chiefly around Cabo Gracias a Dios and Sandy Bay in those days. In 1633 a certain Capt. Sussex

1: Conzemius M-4, 5 (1921) 1932
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recent times this arm has also spread to the Sumu. The Indians use muzzle-loading shotguns, called *raks* or *rakbus* by the Miskito and *arakbus* or *arakbas* by the Sumu. These names are evidently of European origin and are taken from the English "harquebus" or the French "arquebuse," or perhaps the Spanish "arcabuz." Powder is known by its English name (*páutar*), but shot, which is generally kept in the small *pispis* bottle gourd (*Lagenaria lagenaria*), is spoken of by the Indians as the "eggs of the shotgun" (M.: *raks mabra;* S.: *arakbus suma*). Double-barreled guns (M.: *raks sutki;* S.: *arakbus sutki*, that is, "twin guns") are also occasionally met with.

THE CHASE

SKILL IN HUNTING.—Game is very abundant in this sparsely inhabited part of Central America. The Indian is an excellent hunter; the keenness of his senses is marvelous and nothing escapes his eyes. Every sound is noticed and understood, and the distance and the direction whence any noise proceeds is estimated with surprising accuracy. The Indian has a marvelous instinct which permits him to discover with great ease the footprints of animals and then determine the species to which they belong. He pursues the game through the thicket with the sagacity of the bloodhound.

A MALE OCCUPATION.—The wife never accompanies her husband on the actual hunt, where she would be in his way, for she does not learn to handle any arms. When a number of men organize a hunting party, expected to last more than a day, they may be accompanied by the members of their family. Arrived at a place said to be rich in game, they erect temporary sheds, wherefrom they undertake smaller expeditions in different directions. The hunters start out early in the morning, and before nightfall they rejoin the women and children, who have been left behind at the provisional ranch. The best time for hunting is in the morning before 9 o'clock and in the evening after

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Camock, a member of that Puritan colony, appears to have founded a settlement at Cabo Gracias a Dios. Having gained the confidence of the Indians, the son of one of their most important chiefs was taken to England, where he remained two years, a certain Colonel Morris remaining as hostage among the Indians. Some of these Indians went occasionally to Providencia, where they learned English and were instructed in the Christian religion (Sloan, a: pp. LXXVI–LXXVII; Bridges: II, 138–139). In 1641 this Puritan colony, which by that time had found it more profitable to take up privateering than to pursue the peaceable occupation of farming, was stamped out by a Spanish expedition; the settlers then left for other regions, chiefly to the Bahama Islands.

According to Exquemelin (French edit.: II, 277), who wrote in 1678, the first buccaneers, a French vessel, anchored at Cabo Gracias a Dios 60 years previously—that is, about 1618—and entered into friendly relations with the Indians; the buccaneers would seem, therefore, to have been the first Europeans with whom the Miskito became friendly.

3: Pijoan D-5 (ca. 1945) 1946
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The ideal procedure would have been to have had a team composed of various specialists, medical, sociological and anthropological, working together in a cooperative way in a thorough study of the Miskito Indians.

It must be acknowledge that we were fortunate enough to find one physician who had established himself over a period of years in the area in question. This fact made the work much easier and obviated the use of time to form contacts with Indians. This made it possible to have the work continued with a reasonable assurance of success.

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HISTORICAL BACKGROUND

The eastern coast of Honduras and Nicaragua was discovered by Columbus in 1502, during his fourth and last voyage to the New World, when he was proceeding from Trujillo in Honduras to Nombre de Dios in Panama. However, he did not come in direct contact with the Indians of this area.[1] In the course of the following years the Spaniards endeavoured to take possession of this territory but the natives resisted most of the efforts of the colonizers. The Spaniards were chiefly in quest of loot but since gold was not found and the Indians gave them no end to trouble they centered their interests and energies upon the Pacific Coast.

Vague mention was made of the Atlantic seaboard Indians by Gon-

[1] Conzemius, E. Ethnographical Survey of the Miskito and Sumu Indians of Honduras and Nicaragua. Smithsonian Institution, Bull. 106, 1932.

3: Pijoan D-5 (ca. 1945) 1946
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114-175 Vague mention was made of the Atlantic seaboard Indians by Gonzalo Fernández de Oviedo (1478-1557) who was residing temporarily on the Pacific Coast of Nicaragua. A better account was given by the Franciscan missionary Espino[2] who had lived on the eastern coast during the year 1667-1668 (Río Patuca). It was during this period that the English entered into friendly and commercial relations with Indians; British traders arrived with increasing frequency and eventually garrisons were established. During this period there was also considerable trade with English buccaneers. The author of the first scholarly work on buccaneers, A. O. Exquemelin (English: Esquemeling; French: Oexmelin), came to the West Indies in 1666 and visited the Mosquito Coast of eastern Nicaragua in 1671. He had joined the buccaneers and had apparently assumed the function of barber-surgeon. It was, at any rate, in this capacity that he accompanied Morgan on his famous raid on Panama in 1671.[3] Exquemelin's original work in Dutch (Amsterdam, 1678), later translated into German (1679), Spanish (1681), English (1684), and French (1686), not only forms the basis for all of the popular accounts of the Seventeenth Century buccaneer captains but yields important descriptive information of the places he visited, especially the Mosquito Coast. Following Exquemelin, numerous other early historiographers have made accounts of the territory (vide: Dampier[4] Raveneau de Lussan[5] Sloane[6]).

175 In 1786 by virtue of a treaty with Spain, Great Britain agreed to yield the territory and to recognize the sovereignty of the King of Spain over it.[7] Somehow the Spaniards were unable to maintain a foothold in this area, a situation presumably due to the persuasive power of the English over the Indians in encouraging hostility towards the new government. In 1821 the States of Central America declared their inde-

[2] Espino, Fray Fernando. Relación (Verdadera de la reducción de los Indios infieles de la provincia de Taguisgalpa, llamados Xicaques, cuyos operarios han salido, y salen desta provincia del SS. Nombre de Jesús de Goatemala, desde 1612, hasta el presente año de 1674, Guatemala, 1674.

[3] Exquemelin, A. O. De Americaenische Zee-Rovers, Amsterdam, 1678; Americanische Seerauber, Nurnberg, 1679; Piratas de la América, Koln, 1682; Bucaniers of America, London, 1893; Histoire des Aventuriers qui se sont signalez dans les Indes, 2 vols., Paris, 1686.

[4] Dampier, William. A New Voyage Round the World. Fourth edition, 2 vols., London, 1699.

[5] Raveneau de Lussan. Journal du Voyage fait à la Mer du Sud, par les Filibustiers de l'Amerique en 1684 et années suivantes. Paris, 1689.

[6] Sloane, Sir Hans. A voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica, etc. 2 vols. London, 1707-1725; A New History of Jamaica from the earliest accounts, etc. Second edition, London, 1740.

[7] Stout, Peter F. Nicaragua: Past, Present and Future. Philadelphia, 1859.

3: Pijoan D-5 (ca. 1945) 1946
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pendence from Spain and the English authorities from Jamaica renewed their friendly relations with the Indians. In fact, one of the chiefs from the area was crowned with solemnity by the British at Belize, British Honduras, and made king, thus reestablishing a British protectorate system. The "Mosquito" (Miskito) Kingdom in those days included the whole Atlantic Coast of Central America from Chiriqui Lagoon (latitude 9° N.) to Cabo Honduras, a coastline of 700 miles.[7] However, in 1847 the territory became restricted to the territory between Cabo Honduras and Río San Juan, the jurisdiction of which was under British colonials. During these years under British supervision Orland W. Roberts,[8] an active trader on the eastern coast of Nicaragua, gave an accurate account of Miskito Indian customs. Reports were also given by Young,[9] Frōebel,[10] the most important being the text by Bell,[11] who lived in the territory from 1846 to 1862. From 1863 to 1868 John Collinson, a civil engineer, made two voyages to this coast and left an account of his travels.[12] H. A. Wickham,[13] (1867-1868) made a collection of birds from Río Escondido and Pearl Lagoon; P. Levy made researches for the Nicaraguan government[14] and other studies were made by the Swedish zoologist Bovallius,[15] and by K. Von Girsewald, [16] B. Mierisch,[17] and K. Sapper, who obtained a series of ethnographical specimens for the Stuttgart Museum.[18]

Inasmuch as there is a considerable admixture of Negro with the Miskito Indians it may be well to examine the possible reason for this

[8] Roberts, Orlando W. Narrative of Voyages and Excursions on the East Coast and in the Interior of Central America. Edinburgh, 1827.

[9] Young, Thomas. Narrative of a Residence on the Mosquito Shore, During the Years 1839, 1840 and 1841. London, 1895.

[10] Frōebel, Julius. Aus Amerika. Erfahrungen, Reisen and Studien. 2 vols. Leipzig, 1857-1858.

[11] Bell, Charles Napier. Remarks on the Mosquito Territory; its Climate, People, Productions, etc. Journal of the Royal Geographical Society, 1862, 32, 242-268. London.

[12] Collinson, John. The Indians of the Mosquito Territory. Memoirs of the Anthropological Society of London. 1870, 3, 148-156. London.

[13] Wickham, H. A. Notes of a Journey among the Woolwa and Moskito Indians. Proceedings of the Royal Geographical Society. 1869, 13, 58-63. London.

[14] Levy, Paul. Notas geográficas y económicas sobre la República de Nicaragua. Paris, 1873.

[15] Bovallius, Carl. Resial Central-Amerika (1881-1883) Upsala, 1887.

[16] Girsewald, K. Von. Sechs Monate in Nicaragua. Braunschweig, 1896.

[17] Mierisch, B. Eine Reise nach den Goldgebieten in Osten von Nicaragua. Petermanns Mitteilungen. 1893, 39, 25-39. Gotha.

[18] Sapper, K. Reise auf dem Rio Coco (Nordlickes Nicaragua). Globus, 1900, 78, 249-252, 271-276, Braunschweig; Proceedings of the Nineteenth International Congress of Americanists, 1917, 206-210.

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144 In 1875 at the time when the relationship of Miskito and Sumu lan-
175 guages was still unknown, Zúñiga Echenique[19] considered the Miskito Indians as the offspring of fugitive slaves with *Twahka* women (see appendix A). Of the existing Sumu tribes today the *Bawihka* is the
[197] one wich linguistically and ethnologically is the closest to Miskito. The *Bawihka* formerly occupied the area of the coastline where the first Europeans made contact. The fact that Echenique had suggested that the Miskito were derived from slaves and Indians and the fact that the *Bawihka* were on the coast induced Conzemius[1] to deduce that intermarriage between Negroes and Indians, an ordinary occurence today, was a possibility in earlier times.

In 1641 a slave ship was wrecked off Cabo Gracias a Dios. The Africans were on a ship commanded by Lourenço Gramalxo.[20] While on the high seas the Negroes revolted and mastered the ship and not knowing navigation allowed the vessel to be carried by trade winds, where it became wrecked on the Mosquito keys. The Negroes reached the mainland and were made slaves by the Indians. However, they were allowed to inter-marry and their children became free members of the tribe. There appears to be some controversy as to the owner of the vessel and the year it foundered.[21 y 22]

As a result the Miskito from Cabo Gracias a Dios to Sandy Bay developed an admixture of African blood. This Mixture was enhanced by the coming of other refugee slaves and the more recent immigrations of Negroes and mulattoes from the West Indies. The extent to which
[197] the Indian language was influenced by the African newcomers is unknown; the vowel scale of many people in certain villages is the same as the Jamaican creole dialect.[23 y 24].

000 In recent times important contributions with regard to the Miskito

[19] Zúñiga Echenique, Melquisidec. Descripción geográfica del departamento de la Mosquitia, practicada en el año de 1875. Madrid, 1905.

[20] Vide: Peralta, M. M. Costa Rica y la Costa de Mosquitos. Madrid-Paris, 1898; footnote N° 3; Edwards, B. The History, Civil and Commercial, of the British West Indies, 5 vols. London, 1819. Heath, G. R., quoted by Conzemius (footnote 1), loc. cit. p. 17.

[21] De Kalb, Courtenay, Nicaragua: Studies on the Mosquito Shore in 1892. Jour. Amer. Geographical Soc. of New York. 1893, *25*, 236-288. versus opinion expressed by Peralta (footnote 20).

[22] Lehmann, W. Ergebnisse einer Forschungsreise in Mittelamerika und Mexico. Zeitschrift fur Ethnologie. 1910, *42*, 687-749.

[23] Conzemius, E. Notes on the Miskito and Sumu Languages of Eastern Nicaragua and Honduras. Internat. Jour. Amer. Linguistics. 1929, *5*, 57-115.

[24] Heath, G. R. Notes on Miskito Grammar and on other Indian languages of Eastern Nicaragua. Amer. Anthropologist. 1913, *15*, 48-62.

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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[17] T., P.: *wah;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *trâusis*, from the English; T., P.: *kal-anin;* U.: *kalson*, from the Spanish "calzón") with the tails generally not tucked in. They make these articles themselves from imported cloth or they obtain the finished garment by way of trade. Formerly the Sumu used a sort of shirt or poncho, consisting merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open at the approach of rain he pulls his shirt off and covers it up with large *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Nowadays it is made of imported bright-colored cloth, but formerly the common tunu bark cloth was used for this purpose. The upper part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *tatai* by the Sumu.

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[18] S.: *kiñkura*) which hung down to the knees; it was beautifully embroidered with the down of the muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalasawa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

[17] This name is mentioned in 1699 under the form *purproy* (M. W.: 307, 308).
[18] Compare the word "huipil" in Mexican-Spanish.

1: Conzemius M-4, 5 (1921) 1932
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from time to time. There is no chimney in the Indian hut, the smoke (M.: *kyasma;* S.: *wayao*) being allowed to escape through the roof, which consequently presents a dark brown color. This arrangement has the advantage of driving away the mosquitoes.

MODERN HUTS.—In regions where the Indians have had much intercourse with foreigners they have improved their dwellings by the addition of side walls and by a floor of split bamboo or wood; the latter is elevated generally about 3 feet above the ground. The fireplace has then to be transferred to a small adjoining hut. In certain parts near the sea all the dwellings are erected on stilts, as the land is covered with water during the larger part of the rainy season.

In the interior the side walls (M.: *utla klar;* T.: *u dakna;* P., U.: *o itikna*) consist of a wattlework of split bamboo. The Miskito living near the seaside make use of the stem of the papta palm or the leafstalk of the siliko palm, set up vertically in the form of a stockade. This material seldom reaches as high as the roof; it is held in place by horizontally placed poles to which it is loosely tied. The coastal Miskito also employ a curious wickerwork of the split stem of the papta palm for house sides. Mud walls may occasionally be found and have been introduced by Ladinos or by the Black Carib.

Cattle and pigs are kept out of the interior by inserting several sticks crosswise in the doorway (M.: *utla-bila;* S.: *u-pas, o-pas*), or, in the case of an open shed, by building a rudimentary fence around the whole. In the more modern huts there is also a door and several windows, made of a framework of sticks, bamboo, and the like. The Indian dwelling of to-day is generally divided into two compartments of unequal size, the larger serving as living room and kitchen, while the smaller is used as dormitory.

COMMUNAL HOUSES.—Formerly long communal or multiple family houses (palenques) were used by these tribes. Now only the individual family type is met with, which may, however, also be occupied by one or two married children with their respective families. The old communal houses were divided into as many compartments as there were families. Girsewald (22) gives a short description of such a Sumu dwelling from the Waspuk River; it measured 80 feet in length and 40 feet in width and was inhabited by a dozen families. Smaller multiple family houses appear to have been used in former days by the Miskito likewise; M. W. (301) states that Sandy Bay, the most important of their villages in those days (1699), consisted of twelve straggling houses with about 400 inhabitants. Formerly, when the various Indian tribes were continually engaged in wars, this arrangement facilitated the defense of their villages.

1: Conzemius M-4, 5 (1921) 1932
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CHESTS.—Wooden chests or trunks, known by their English names, are used to store clothing and valuables. They may be of foreign manufacture or made locally from the Spanish cedar (*Cedrela* sp.). 352

ILLUMINATION.—Pine-wood torches are used for illuminating purposes. In certain regions where the pitch pine (*Pinus tenuifolia* Benth.) is absent or scarce the Indians make rude candles by surrounding a cotton thread with beeswax or with the gum of certain trees, as the rubber tree (*Castilla* sp.) or the locust tree (*Hymenaea courbaril* L.). Small baskets, filled with big tropical fireflies, are also used occasionally as lanterns by children. 354

VARIOUS.—The products of the plantation are generally thrown on the floor or put on the tables or in the attic. Little shelves are suspended from the rafters in order to keep cooked food, meat, or fruits free from the numerous creeping and crawling insects which infest the dwellings. 356

Under the roof are seen the various tools, the fishing and hunting implements; they are stuck in the thatch or held in crude racks. From the rafters depend bags of pine-wood soot, bottles with red pigment, and hair oils or small *pispis* gourds (*Lagenaria vulgaris* Ser.) containing shot.

DOMESTIC UTENSILS

FIREMAKING.—Fire was produced formerly by the "twirling" method. A notch was made in a piece of wild cane and a hard-wood stick placed in the cavity. This stick was held perpendicularly and twirled rapidly round and round until fire was produced. Cotton was used as tinder. A very curious method practiced by the Sumu or Paya of Rio Patuca has been described by the Franciscan missionary Fernando de Espino.[21] 372

Steel and flint were introduced in early days for kindling fire, but have now been replaced practically everywhere by matches of foreign manufacture. [[71]]

FIRE FANS.—In order to accelerate the flame a dozen feathers from large birds, generally the guan (*Penelope cristata*) are tied together in the shape of a fan (M.: *kuru-taya;* S.: *uhlawa*).

TONGS.—Among the Miskito of Pearl Lagoon bamboo tongs or tweezers may occasionally be seen, to pull roasted plantains, cassava 412

[21] Ha criado Dios en lo mas retirado de la montaña un bejuco muy largo, sin, mudos, a manera de ramas de mimbre; cogen esta y cortanla en trozos pequeños de a palmo; pónenlas al humo, y en estando bien secas, cuando han menester fuego, cogen una, y con las dos palmas de las manos la estrujan como al molinillo para hacer chocolate, y cuando ellos ven que está de cierto temple, soplan una punta o extremidad y por la otra parte sale fuego, y se enciende como mecha de escopeta, porque al en si es estoposo por de dentro. De otro modo sacan fuego, que es el común de los indios, estregando un palo con otro (Serrano y Sanz: 367–368)

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OTHER HANDICRAFTS

283 BARK FIBERS.—From various trees known locally as "mahoe" or "majagua" (M. and S.: *sani, wahpi, wahmatis, tâitu*) the Indians obtain strong bark fiber (M.: *sani;* S.: *wahso*). The best fiber from these trees is pulled off, split, cut into many threads of the desired size and made into ropes and cordage, hammocks (M.: *silmika;* S.: *wah*), matates or carrying bags (M.: *kûa;* T., P.: *wili;* U.: *wali*). These articles are colored with native bark dyes. The carrying bags are of various sizes and consist of coiled work without foundation; they are furnished with a head strap woven of one piece with the bag.

Bast fiber is also the common tying material of the Indians, and a supply thereof may always be found in the huts. It is also used as pack straps, which are put around the forehead and support the load carried on the back.

PITA FIBER.—Pita or silk-grass fiber (M.: *kara;* S.: *awa*) is employed for similar uses as bast fiber, and the articles made from it are practically indestructible. It is also made into fishlines, fish nets, and bowstrings, and used to repair shoes. Its extraction is very laborious. The pulpy covering surrounding the fibers is removed by scraping the surface of the leaf on a flat board with the aid of a machete or heavy iron knife. The fibers, which are thereby exposed, are then loosened and easily pulled from their bed by rubbing them crosswise of the leaf with the leaf pressed down upon the flat board. They are then washed to remove any adhesive pulp, dried, and rolled on the thigh into twine.

285 BASKETRY.—Basketry is not highly developed, although in such a well-watered country as the Mosquito Coast there is no lack of palms, vines, creepers, and epiphytic plants which may be used in basketwork. Certain vines are used in tying material, especially in the construction of the dwellings. The carrying bag of bark fiber or pita fiber takes to a large extent the place of baskets. From *wari* withes is made a round basket (M. and S.: *uslun, usnuh*), which is used to store calabashes and other small kitchen utensils. Other types made by the Sumu are called by these Indians *wah-tâina* and *sidan*. A large waterproof basket, known locally by the name *pataki*, is obtained in trade from the Black Carib; it is made from *siwa* withes.

281 LEATHER WORK.—The art of tanning has apparently been learned from the whites. The bark of numerous indigenous trees is used by the Indians for tanning purposes. Leather is used nowadays for drumheads, masquerade dresses, sandals, moccasins, crude saddles, and belts.

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383 RUBBER INDUSTRY.—Some of the Indians have learned the process of hardening the milk of the rubber tree (*Castilla* sp.) by treating

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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsan;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilywa;* T., P.: *ala;* U.: *tasaika*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

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231 sp.), agouti (*Dasyprocta* sp.), deer (*Odocoileus* sp. and *Mazama* sp.), squash or coati (*Nasua narica*), and raccoon (*Procyon lotor*).

Wickham (b: 163; c: 200) even saw a tame otter among the Ulwa of Rio Escondido. The Indian women have great patience in taming young animals and they will suckle them as they would their own children. These animals are generally caught while still very young.

INDIGENOUS BIRDS.—The domestic turkey is now found in almost every hut. Among the other native birds which are usually tamed by the Indians are the following: curassow (*Crax* sp.), guan (*Penelope* sp.), mountain hen (*Tinamus* sp.), muscovy duck (*Cairina moschata*), macaw (*Ara* sp.), parrot (*Chrysotis* sp.), parrakeet (*Conurus* sp.), toucan (*Ramphastos* sp. and *Pteroglossus* sp.).

The birds are taken out of the nest while still young, but old birds are occasionally tamed. When slightly wounded or when shot with a blunt arrow they are carried home and kept for a few days without any food. After that they become generally very docile and are ready to eat the food given to them.

NATIVE BEES.—Various species of the native stingless bees are 231 occasionally found in a semidomesticated state around the Indian 263 huts. About a dozen species are found in the country, all belonging to the family of the Meliponidae. The largest of them is about the size of the European bee. The honey cells are circular and the honey is yellow and slightly acidulous in taste; it does not crystallize when kept for some time, as is the case with that of the European bee. It is slightly laxative and is generally diluted with water, either fresh or after having been allowed to ferment. Previous to the introduction of sugar-cane, honey was used to sweeten food. The wax, which is 237 light brown in color, is used as "cement" in the making of arrows, spears, and other implements; in certain regions it is also used for lighting purposes. The Indians also collect the honey from the bee 222 nests in the forests and store it in large bamboo joints.

DOMESTIC ANIMALS OF FOREIGN ORIGIN.—The most common domes- 231 tic animals are the dog, pig, cattle, and fowl, while the horse, cat, goat, ● 177 and sheep are rarely seen. All these animals are of foreign origin and have been introduced from the interior of Honduras and Nicaragua. Among the Indians they are known almost invariably by their Spanish or English name.[40] When the Indian family travels all the livestock is taken along.

CATTLE.—Cows (M.: *bip*, from the English "beef"; S.: *toro*, from 231 the Spanish *toro* "bull") are owned by many Indians, especially those living in the savannas. They feed on the coarse grass, there being no artificial pastures made by the Indians. The cows are rarely

[40] The Ulwa, however, call the cow and the horse by the native names they apply to deer (*sana*) and tapir (*pamka*), as do a number of other tribes in Central and South America.

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tions on the edge of the rivers, often at a considerable distance from their villages.

INFLUENCE OF CULTIVATION UPON THE FOREST.—The bush, which springs up again from the seeds of the forest trees germinating in the ground, is cut down from time to time. After two or three crops have been obtained from the plantation, a variety of weedy-looking shrubs and grass begins to get a hold upon the land. The plantation is then abandoned, as the Indian does not consider it worth while to undertake the great amount of labor needed to keep the ground clear. He prefers to prepare a new plantation (M.: *insla disañ;* S.: *yamak wisam*) by cutting down another patch of the virgin forest, where he is sure of a better crop.

The brushwood springing up in the abandoned plantation (M.: *insla prata;* S.: *yamak ba*), being not interfered with any longer, gradually chokes off the grass and weeds. As a number of the larger hardwood trees had been left standing in the first place, such an abandoned plantation will, after 15 or 20 years, not differ essentially from the surrounding primeval forest. It may then be cut again for the making of a new plantation. As the country is sparsely inhabited, the Indians will always find virgin forest within close distance from their home; besides, many of them are seminomadic and change their village sites from time to time. Were they to make their plantations for a long-continued period on the same spot, cutting down the brushwood again and again, a great change would gradually take place. The soil not containing any more seeds of forest trees, grass and a scrubby vegetation would in time spring up. This may be observed around certain villages, where by this manner the forest has been beaten back, inch by inch, gradually but surely.

BANANAS AND PLANTAINS.—It is noteworthy that the most important food plant of the Sumu and of the Miskito living toward the interior, the banana (M.: *siksa;* S.: *wakisa, pasa, iñkini*), is not indigenous to America. It was apparently brought by the Spaniards from the Canary Islands during the early part of the discovery, first to Santo Domingo (Haiti), and from there to the mainland. According to the testimony of the buccaneers of the latter part of the seventeenth century, bananas and plantains were already cultivated in those days by the Miskito of Cabo Gracias a Dios. Raveneau de Lussan (429) saw in 1688 many bananas on the banks of Rio Coco, and states that they had been planted by the Albaotiins (= Sumu) and by the river currents. He also found this plant cultivated by the Mulattoes living around Cabo Gracias a Dios (438). Dampier (I, 9–10) mentions plantains among the Miskito, but he does not say anything about bananas. Exquemelin (English edit.: 114, 201), on the other hand, who visited the coast in 1671 and 1672, saw bananas, plantains, and

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245 "racoven" [41] among this same tribe as well as among the Kukra of the Corn Islands. M. W. (302, 310) also refers to bananas and plantains among the plants cultivated by the Miskito.

There is a great variety of bananas and plantains grown by these Indians, but by far the most common is the so-called "Gros Michel" (also Jamaica, Martinique, Guadeloupe, or Bluefields), known to the Ladinos as "patriota" or "blanco"; this is the only variety entering largely into world trade. The Chinese or dwarf banana (*Musa chinensis* syn. *M. humilis* and *M. cavendishii*), which is the one grown in the Canary Islands for the European market, is also grown a little; this is the only species suitable for cultivation in the temperate zone and in the higher altitudes of the tropics. It is cultivated in Florida and in southern Louisiana, where it is called "horse banana." Various varieties of the plantain (M.: *plato*, from the Spanish "plátano"; S.: *waki; Musa paradisiaca normalis*) are also grown by both tribes. There are some native names for certain of the local varieties of the plantain and banana.

244 CASSAVA.—Sweet cassava (*Manihot palmata* Muell. or *M. aipi* Pohl; M.: *yauhra;* S.: *malai, maley*) is the staple food of the coastal Miskito; it is also cultivated by those living inland, and by the Sumu. This food plant was mentioned by Raveneau de Lussan (438), Exquemelin (Engl. ed.: 251), and M. W. (310). The bitter cassava (*Manihot utilissima* Pohl) is unknown to either Miskito or Sumu, but is largely cultivated in two different varieties by the Black Carib (Garif) and the Paya of Honduras, who eliminate the deadly hydrocyanic acid contained therein by ingenious methods.

EDDOES OR TANIAS.—This plant, which is known locally among the English-speaking population by the Jamaican name "coco" (*Xanthosoma sagittifolium* Schott; M.: *dusua;* S.: *wilis*), is also cultivated for its eatable tubers. It is of similar appearance and habits as the taro (*Colocasia* sp.), the staple food of the Pacific Islands.

SWEETPOTATOES.—There are several varieties of the sweetpotato (*Ipomoea batatas* Poir.; M.: *tawa;* S.: *pai*). This food plant has been met with by several authors of the seventeenth century among the Miskito of Cabo Gracias a Dios (Exquemelin, Engl. edit.: 251; Dampier: I, 9; M. W.: 310). It was also cultivated by the aborigines of the Corn Islands in those days (Exquemelin, Engl. edit.: 114).

[[77]] YAMS.—Several varieties of yams (*Dioscorea* sp.) are cultivated; they are of African origin and the Indians have no native name for them.

[41] This name is probably deformed from pacoba, bacove, bakaceba, or bacoven, names given to the banana in Brazil and in the Guianas. These words derive from pako or *pakoba* "banana" of the Tupi-Guarani linguistic stock. In the Spanish edition of Exquemelin's work (p. 453) the word is, in fact, spelled "bacoves." Cf. also Van Panhuys, Observations on the Name Bacove, Twenty-first International Congress of Americanists. Göteborg, 1925.

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245 On the Atlantic slope of Central America this palm is grown as far north as Rio Tinto in Honduras, but on the Pacific side its northern limit is formed by Lake Nicaragua. It is found only in the cultivated state; the palms found occasionally in deserted regions indicate former village sites. A wild variety, bearing inedible small fruits, is found on the Mosquito Coast to the south of Bluefields; it is there known as "pejivalle de monte" or "wild supa."

COCONUT PALM.—The coconut palm (*Cocos nucifera* L.), called *kuks* by both tribes, is found in a semiwild state all along the seashore; some of the inland Indians have also planted a few trees. This palm is not mentioned by the buccaneers who visited the Mosquito Coast, as Exquemelin, Dampier, and Raveneau de Lussan; it was met, however, by M. W. (310). The Indians make little use of the coconut, except that they drink the water and eat the tender kernel of the young nut; very few of them extract the oil from it, as do the Creoles and Black Caribs.

249 SUGARCANE.—Sugarcane (*Saccharum officinarum* L.; M.: *kayu*, from the Spanish "caña"; S.: *tisnak*) was brought by the Spaniards during the early part of the sixteenth century to the New World, first to the West Indies and later to the mainland.[a] The various buccaneer authors do not say anything of its occurrence among the Miskito. The first mention of this plant on the Mosquito Coast is found by M. W. (310), who states that the Miskito King Jeremy had some in his plantation, but in those days (1699) the Indians did not yet know how to make sugar from the juice. Nowadays they drink the juice of this plant, after having allowed it to ferment; they also boil it into sirup and brown sugar.

CACAO.—Although an indigenous tree, cacao (*Theobroma cacao* L.; M. and S.: *kakau*) is cultivated only by the Ulwa, but in former days it was also grown by the Miskito (M. W.: 308, 310). The Indians also collect the pods from the various varieties of cacao trees which grow wild in shady parts of the forest.

Cacao pataste or "werbra cacao" (*Theobroma bicolor* Humb. and Bonpl.; M.: *urañ*; S.: *kuru*) is cultivated, however, in the neighborhood of the huts.

CACTUS.—Sloane (a: p. LXXVIII) reports that the Miskito cultivated the Opuntia cactus for the breeding of the cochineal insect; this must be a mistake, however, for that industry was limited to the Indian tribes of the Pacific slope and of the interior, particularly in Mexico, Guatemala, Salvador, and Honduras.

245 FRUIT TREES.—The most common of the indigenous fruit trees, outside of the ones enumerated above, are the following: Pineapples

[a] Hernán Cortés, the great conquistador of Mexico, introduced the plant from Haiti into Honduras (Trujillo) as early as 1526.

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(*Ananas sativus;* M.: *pihto;* S.: *masa, masahti*),[46] papaws or papayas (*Carica papaya* L.; M.: *twas, tawas;* S.: *ulmak, ulumak*), avocados or alligator pears (*Persea gratissima* Gaertn.; M.: *sikya;* S.: *sikya, sarik*), soursops (*Anona muricata* L.; M.: *dwarsap;* S.: *sapot*), guavas (*Psidium guajava* L.; M.: *sikra;* S.: *burimak*), cashews (*Anacardium occidentale* L.; M. and S.: *kasau*), and watermelons (*Citrullus vulgaris* Schrad.; M. and S.: *rayapisa*). Spanish plums (*Spondias purpurea* L.), although apparently indigenous, are rarely found, and their Indian name *ploms* comes from the English language.

The most important fruit trees of foreign origin are: Citrus fruits (oranges, lemons, sweet limes, sour limes, shaddocks, grapefruits, citrons), mangoes (*Mangifera indica* L.), breadfruits (*Artocarpus communis* syn. *incisa*), tamarinds (*Tamarindus indica* L.), and rose apples (*Eugenia jambos* L.).

GARDENS.—Around their houses many Indians cultivate also a few fruit trees and other plants. The calabash tree (*Crescentia cujete* L.; M.: *kahmi;* S.: *sutak*) is very common in these gardens; it is esteemed for the very useful kitchen receptacles obtained from its fruit. A few bushes of cotton (*Gossypium peruvianum* Cav.; M.: *wahmuk;* S.: *wahmak*), chile peppers (*Capsicum* sp.; M.: *kuma;* S.: *anmak, aimak*) and annatto (*Bixa orellana* L.; M.: *aulala, tmarik;* S.: *awal*) are found near every lodge. A number of flowers are also cultivated, as the African marigolds, purple and white four-o'clocks, and the crimson hibiscus.

FISHING AND FISHING IMPLEMENTS

A very large share of the food supply of these primitive Indians is obtained from the sea, the lagoons, and the rivers. Fishing is therefore an occupation wherein both tribes have attained an unusual degree of skill. The main implements used for this purpose are harpoons, fishhooks, nets, and bows and arrows.

JAVELIN.—The javelin or throwing spear (M.: *wdisku;* S.: *suksuk*) is used in the sea, lagoons, and larger rivers. It consists of a wooden staff, from 8 to 9 feet in length, in the front end of which a sharp barbed steel head has been inserted. The staff is of strong, slender, light wood, generally of a tree called "magaleta" (M.: *sihnak, sinak;* S.: *sina*); the Ulwa, however, use for this purpose the wood of a tree called by them *pan-kuba*, which is said to be superior to the above-mentioned species. The loosely fitting steel point is from 4 to 5 inches long and is made of an old file, wherein several series of double

[46] The old authors, Exquemelin (Engl. edit.: 251), Dampier (I, 9), and M. W. (308, 310), met this fruit among the Miskito during the latter part of the seventeenth century; in those days it was also cultivated by the aborigines of the Corn Islands (Exquemelin, Engl. edit.: 114).

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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pañ* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lâua, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramâira;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tawa*) and several species of granadillas or fruits of passion

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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[48]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bâinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *ûlala, tmariñ;* S.: *awal*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

COOKING OILS.—The kernels contained in the seeds of various palms
252 are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), hone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[48] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, hazendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legía sin la ceniza, y a fuego manso la van calentando hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

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624 chiefs, called by the Miskito name *wita* or *wihta* (lit.: "head"), resided in the larger villages.

648 Now the government of the two republics, Honduras and Nicaragua, is represented by *comandantes*, who are invariably Ladinos. Indian *subcomandantes* are occasionally named in the larger areas, but their authority is practically insignificant. Some deference is also paid by the Indians to the elders of the settlements, and especially to the sukya. The officials despatched from Tegucigalpa or Managua are rarely of the better element, and have at times committed great abuses among the timid and peaceful aborigines. They are too frequently men of low morals who try to enrich themselves by imposing fines upon the Indians, which are put into their own pocket, or by compelling the natives to work for their personal benefit.

LAWS: CRIME AND ITS PUNISHMENT

627 ADMINISTRATION OF JUSTICE.—In former days the punishment of criminals was intrusted to the individual wronged rather than to special officers of justice. If the injured person did not take any steps to revenge himself he was considered a coward.

●177 692 681 Toward the middle of the eighteenth century, when British influence spread to the "court" of the principal Miskito chief, special officers, known by the name *kwatmas* (from the English "quartermaster") were intrusted with the execution of government orders and the administration of justice. Punishment was inflicted in the shape of fines, flogging, and death by hanging; prisons were unknown. On their periodical visits these officers used to whip all the young people whom they could seize, in order to cure them of their laziness and stinginess, apparently whether they were guilty of the charge or not. This was called "teaching the people" (M.: *upla smalkaya;* S.: *mōih sumalnin, mōih sumalnaka*) and had the object of inculcating principles of good conduct and morality. An account of such proceedings is given by Bell (b: 278–282).

685 THEFT.—A thief was compelled according to Indian law to restore twice the value of the stolen object.

847 INFANTICIDE.—This was apparently not considered a crime in former days under certain circumstances. (See Children: Their Birth and Education.)

683 BODILY INJURY.—For any bodily injury, whether done intentionally or not, a payment of "blood money" (M.: *tala mana;* T., P.: *a minit;* U.: *awas makalnak*) was collected.

682 MURDER.—A murderer had to follow his victim into death. If he should not do so voluntarily, the relations of the murdered man might kill him without risk of punishment; besides, in that case, his memory would be dishonored. The *lex talionis* was applied rigidly.

1: Conzemius M-4, 5 (1921) 1932
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hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yañ*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

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1: Conzemius M-4, [illegible] 1932
SA15 Mosquito SA15

551 177 These old Indian names have now practically been superseded by Spanish or English names. On the coast English names seem to be preferred, but in the interior nearly all the names are taken from the Spanish language. The Indian generally takes only one name, which may be either a Christian name or a surname; from time to time they change it. A well-known Miskito of Rio Patuca, the owner of many cattle, even took the name "Honduras."

Foreigners traveling on the Mosquito Coast are frequently asked by the Indians to name their youngest child. It is often difficult to find a name which is acceptable to them, as they do not want any which is already found in the region. M. W. (304) tells us that at the end of the seventeenth century the most prominent Miskito all had names given to them by the buccaneers; every one of the adventurers stopping at the coast was asked to give a name to one of the Indians, and the latter thought that the same buccaneer could not well give a name to more than one Indian.

551 The mentioning of a deceased person's name is taboo among all the tribes under consideration, and it is a direct insult to mention it in the presence of his relatives.

551 177 But at no time does the Indian like to be addressed directly by his name. It is therefore often difficult to find out their real name, especially of the women, who are generally known as So-and-so's wife, daughter, mother, sister, etc. In former days this was the case with the men, too, but owing to their working in the mahogany camps, gold mines, and other enterprises, where they had to give their name in order to be distinguished from the other laborers, this aversion has gradually disappeared. While in charge of a mahogany camp on Rio Coco I had great difficulty at first in obtaining the names of new laborers, especially of the Sumu. They would invariably tell me that they were the son of So-and-so, or they gave me the name of the village they hailed from. However, if there were other Indians present one of the latter would promptly answer my question by telling me the name of the particular Indian I had addressed.

601 The series of relationship words, by which the members of a family address each other instead of proper names, is very complicated among the Miskito, and may be replaced by a whole new series when a death occurs in the family. Husband and wife call each other *mayi* "my consort." Before any child has been born to them the husband often calls his wife *kika* "girl," while she calls him *wahma* "young man." After the birth of the first child they often call each other *luhpi yapti* "my child's mother," and *luhpi aisa* "my child's father," respectively. After the death of a child they apply to one another the name *sukrika*. The words *mahma* or *masa* are frequently used to address a son or brother, while *kika* or *misis* are the forms of address for daughter or sister.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

hands of an Indian from the neighboring village of Cuje, who called it "quijongo" or "sambumbio." It was at least 5 feet in length and 1½ inches thick. A little from the center the string was tied back to the arc with the aid of another thread, so that two strings of unequal size were formed. This instrument could produce a great variety of tones. In Olancho (Honduras) I saw later a bow of equal size but with a calabash resonator; it was called "caramba" there. The gourd was fastened with the mouth downward at the convex surface of the arc, at the same point where the cross string had been attached to the wood, that is, about one-third the distance from one end. The Rama of Nicaragua also call this instrument *lufiko*, while among the Lenca of Honduras it is known as *bumbum;* it is also found among the Kekchi of Guatemala, and was known to the Island Carib of the seventeenth century, according to De Poincy.

In spite of the fact that in Central America the musical bow is limited to the pure Indians, it is supposed to be, like all other stringed instruments, of foreign origin. The various names by which it is known in Central America savor of African origin. It is also found in certain regions of South America and has a wide distribution under different forms in large areas of Africa and Melanesia.

OTHER INSTRUMENTS.—Violins, guitars, accordions, and harmonicons may be found in certain regions; they are chiefly of German manufacture. Instead of beating the drum or shaking the rattle, the Miskito occasionally clap the hands together at the dances in order to obtain a rhythmic effect.

AMUSEMENTS: SONGS, DANCES, STORY-TELLING, GAMES, AND SPORTS

SONGS.—The Sumu rarely sing (M.: *diwanaya;* T., P.: *diwannin, diwannini;* U.: *unbdinaka*), but the Miskito sing occasionally when they are either sad or happy. All their songs are soft and plaintive, and they all sound alike to the stranger, who is unable to distinguish the gay songs from the sad ones, unless he has lived some time among the Indians. The sukyas of both tribes sing upon practicing their rites of incantation, but owing to their intermingling of many old and obscure phrases, these songs are unintelligible to the other Indians.

I was unable to collect any indigenous song, but Young, Fellechner, and Bell have been more fortunate than I. In these songs appear many phrases not used in general conversation. Fellechner (268) obtained a number of songs which were apparently composed in an antique form of the Miskito language, for the interpreters were unable to give the meaning of many parts of them. Most of this material has never been published. The following specimen is that

1: Conzemius M-4, 5 (1921) 1932
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539

In the night I thought of my dead boys;
They called me "Mother!"
I thought I was alone, and had no children.
I remembered my daughters,
But they were far away among the white people.
My children have come back.
My heart is like the young plantain-leaf,
That shoots out when the sun shines.

DANCES.—Dancing (M.: *dans pulaya*,[42] T.: *dans pulnin;* P.: *abanini, danis pulnini;* U.: *abanaka*) is practically limited to the various festivals and had perhaps originally a religious significance. Certain rejoicings of the Miskito, at which dancing takes place, are called *li-siksa* (lit.: "black water"), and others are known by the name *plamana;* the latter are celebrated in honor of some one who is leaving for a long journey. 535

The women perform individual dances which do not lack a certain grace; they place the hands upon the shoulders or the head and make various contortions of the body as they walk or jump around.

Some dances of rejoicing have been introduced by the Negroes or Creoles, and are performed chiefly around Christmas, which is considered a period of merrymaking by all these Indians, whether evangelized or not. The festivities last about two weeks. A great circle is formed with men and women alternating and joining hands or placing the right hand upon the left shoulder of their neighbor; in the center are seated one or two men beating drums, and at the rhythm the circle moves around. 535 177

STORY-TELLING.—The telling of stories is one of the favorite ways of passing the long hours at night before going to bed. The old Miskito, who lived under the good old days of the "Mosquito Kingdom," are always glad to talk of their armed expeditions into the "Spaniard's" country (Honduras, Nicaragua, Costa Rica), and to relate some bizarre exploits in connection with those wars. The Indians can relate an occurrence in the most animated manner, but they do not seem to invent tales or stories as do the Negroes. 538

When the Indian has returned from a hunting or fishing expedition he delights in giving a most detailed account of everything he noticed in the course of the day, even if nothing out of the ordinary occurred. He will give all the particulars regarding the game he saw, and relate in a most tedious manner how he succeeded in outwitting it and getting within gunshot of it. The narrator may keep on in this manner for hours, while his patient listeners occasionally interpolate an exclamation denoting their astonishment, surprise, doubt, agreement, or comprehension.

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[42] The word *dans* or *danis* is taken from the English.

1: Conzemius M-4, 5 (1921) 1932
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Wickham (b: 160–161; c: 205) states that the Ulwa used to cure pains in the limbs by flogging the aching part with a kind of nettle, until the skin became raised in bumps.

A disease of the eyes, perhaps trachoma, called *ūkri bāikan* by the Miskito, is prevalent; it does not produce total blindness, but causes great pain. Foreigners appear to be immune to it.

Venereal diseases, as syphilis (M.: *mātrmanka;* S.: *pildū*) and gonorrhea (M., S.: *iskadora*), are only met with in the larger villages at the coast. Anthropologists and the medical world seem, however, to agree now that syphilis is of American origin.

Yellow fever likewise is undoubtedly of New World origin, and was formerly endemic in certain parts of the Central American lowlands. In the sparsely populated country under consideration, however, no authentic case of yellow fever has been recorded. Perhaps the transmitting agent, a species of mosquito (*Stegomyia fasciata* syn. *Aëdes* sp.), is absent. Black water fever is also unknown. Leucorrhea is, however, very common. Indians suffer seldom from hemorrhoids (M.: *slabla dāiwaya;* S.: *sarani putulnin, saraka putulnaka*), which swelling is prevalent among whites residing in the country.

FOREIGN DISEASES.—Europeans have introduced among the Indians a number of distressing maladies formerly unknown to them, and against which they had not the slightest immunity. Although strong and robust, the Indians are especially subject to infections by the germs of diseases generated by large communities.

Epidemics of our common catarrh (M.: *syahka;* T., P.: *ohdana;* U.: *nañtak iwanaka*) have occasionally caused great havoc among the Indians of the interior.

Whooping cough (M.: *ikya;* S.: *duk*) appears occasionally as an epidemic among children, whereby many of them die.

Influenza or grippe also occurs periodically as an epidemic. It seems to have been brought to the country for the first time in 1807–08 by some Miskito returning from the logwood and mahogany camps of British Honduras. Consumption is also found sometimes, especially among the Sumu.

Measles and smallpox were brought to the New World by the first conquistadores and facilitated the subjugation of the Indians. Epidemics of measles (known by the Spanish name *"sarampion"*) are responsible for many deaths; this disease was already observed at Cabo Gracias a Dios among the Miskito during the latter half of the seventeenth century (Exquemelin, French ed.: II, 277). Smallpox has on different occasions decimated entire villages, but since the middle of the nineteenth century has not appeared on the Mosquito Coast. Wickham (b: 204–208) gives an account of the last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

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1: Conzemius M-4, 5 (1921) 1932
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could scarcely move, and he asked his brother for some water. The latter did as he was told, but the more Suko drank the thirstier he became, and he kept his brother continually on the run to fetch water. Finally Kuru became tired of this and helped his brother to get to the edge of the creek, so that he might drink as much as he wanted.

Arrived at the waterside, Suko lay down on the ground, and reaching with his head down in the water, he kept on drinking without stopping. Gradually his body assumed the shape of a gigantic boa constrictor (M.: *waula;* S. *wayil*), while the head retained its normal size and shape. Kuru became scared and he went home, but did not dare tell anything about what had happened. When the people inquired about his brother, he answered that he was still engaged in fishing and would come a little later.

But the neighbors noticed that something had happened and they made off all together to look for Suko. Arrived at the fishing ground, they found the boa constrictor on the branches of a very high ceiba or silk-cotton tree. But hardly had they perceived him when a big flood came which inundated the whole country. Every one was drowned with the exception of Suko and the latter's wife and children.

CHRISTIANIZATION.—Many women and children who have not been christened carry small crosses, medallions, and scapularies around their neck, which articles they have obtained from passing priests, or bought from Ladino traders. They consider them generally as charms to ward off danger, sickness, poison, and death. By many Indians who have not received any teachings from missionaries baptism is considered often only a sort of magic ceremony to get a new name, drive out the devil, or ward off danger, evil, and the like. Even in the interior, where many Indians pretend to be Catholics, the cult of the saints is often nothing less than a fetish worship. Pictures and statues of the saints take the place of house idols. When the Indians are on the point of committing an act which does not agree with the teachings of the church, the respective images or statuettes are covered up with a cloth, so that the saints are unable to observe them. When they ask the saint for a special favor they make a vow or solemn promise to him and pray during nine consecutive evenings. In case the saint proves unreliable he is sometimes punished by being beaten or beheaded or mutilated in some other way.

During the colonial period Spanish missionaries made several attempts to penetrate among the aborigines of the Mosquito Coast, but their efforts were unsuccessful. An account of the activities of these Franciscan monks is given by Conzemius (b: 25–31). Since the last years of the nineteenth century Spanish Capuchins from Barcelona have been established at Bluefields and in several of the

1: Conzemius M-4, 5 (1921) 1932
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764 532 picted eight of the above-named masks; most of them have their backs concaved in a cylindrical form, by which we might imagine that they were parts of sepulchral urns. (See also Roberts, pp. 299–300.)

775 CATCHING THE SOUL OF A DECEASED PERSON.—Upon the death of a person the soul (M.: *isiñni*) or "shadow," as the Creoles say, leaves the body and remains about the house. After the burial it is "caught" by the sukya and taken to the grave; otherwise it will roam about and do all sorts of mischief. This custom has been introduced among the Miskito by the West Indian Negroes; recently it has spread to the Twahka and Panamaka.

This action takes place at night by a very dim light. The task of the sukya appears to be by no means easy. Sometimes he fails to catch the soul on the first night and has to do everything over again on the following day. He throws himself into a state of ecstasy and then dances around the bed of the deceased, over which a white cotton sheet has been spread. Then he sits down in a hammock which has been slung near by and he communicates the messages received from the dead during his supernatural state. The latter might give him the names of the persons who owe him some money or have failed to return a borrowed object. If he owns some young trees, the fruits of which he has not yet tasted, he will order them cut down without any further delay. Toward daybreak, when all the people present are more or less drunk, for intoxicating beverages are served to all the guests, the sukya seizes some insect, generally a firefly or a beetle, which he pretends to be the soul of the deceased. He wraps it up quickly in the bed sheet or incloses it in a bottle and then takes it to the grave.

Some of these sorcerers are said to be able to catch the soul of Indians who have died far away from home. This is, however, a more difficult task, as the soul may keep him waiting for a whole week, until it condescends to be taken to its final resting place. Formerly the soul was supposed to enter animals or other objects belonging to the deceased, and these had to be killed or broken to drive the intruder out.

THE HEREAFTER

Both tribes believe in the immortality of the soul and its translation to a realm of happiness and bliss. Remains of this belief are seen in the burial customs, for certain objects are given to the dead which are indispensable to him during his long journey to that final resting place. Some Indians make the future existence dependent on present conduct, but this idea has undoubtedly been borrowed from Christianity.

[177]

2: Kirchhoff E-4 (no date) 1948

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THE CARIBBEAN LOWLAND TRIBES: THE MOSQUITO, SUMO, PAYA, AND JICAQUE

By PAUL KIRCHHOFF

INTRODUCTION

M
101 The modern *Paya* and *Jicaque* enclaves in the Caribbean Lowlands may
171 not all be the descendants of the people so named by the first explorers
177 (maps 2 and 5). It is possible that the culture of the people first discovered on the coast was similar to that from which the present-day *Mosquito* and *Sumo* culture has evolved; although the north coast probably had culture traits that differed significantly from those of the *Mosquito* and *Sumo*. It is impossible to describe the post-Conquest changes of the culture of the *Paya* and *Jicaque*. It seems reasonably certain, however, that during the past 400 years the east coast people and the people now known as the *Paya* and *Jicaque* have converged culturally. We can, then, describe these peoples as a unit, although hypothetically their cultures have developed out of the ruins of a more complex aboriginal
G background.

177 Less important but significant features of the culture may be ascribed
175 to the contact with the *Black Carib* Indians, who were brought to the Bay Islands in 1796 and whose descendants have settled on the mainland. The importance of the early Negro influence has already been noted.

CULTURE

SUBSISTENCE ACTIVITIES

M
241 **Farming.**—A type of slash-and-burn agriculture is employed by all tribes. Every season the men clear new farmlands and burn the slash. Planting and cultivating is done with a digging stick. This is woman's work, except among the *Jicaque* (Von Hagen, 1943), and the women also harvest the crops. Some fields have combinations of crops, such as maize, beans, and peanuts; others are reserved for single crops, especially the tubers.

G A list of agricultural products may be found below. Sweet manioc,
[241 an important *Mosquito* crop, is grown by all tribes. Bitter manioc, prob-
177] ably introduced by the *Carib*, is important to some *Paya* and *Jicaque*.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

342 time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams.

352 Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built [354] of three logs on slightly raised mud platforms inside the houses. Stored 415 near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

291 Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still [177] worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

302 Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated [301] theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

301 Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

In recent times important contributions with regard to the Miskito 114
Indians have been made by H. J. Spinden,[25] A. H. Schultz,[26] D. E. Harrower[27] and the exhaustive investigations of E. Conzemius.[28]

THE TROPICAL SITUATION

The status of peoples living in the tropics and semi-tropical regions 262
varies considerably, depending on environment and man's adaptation to his habitat.[29]. Different foods are produced under different conditions. Thus, in the inner jungles and in certain highlands, very little food may be available; along the rivers it may be plentiful, and along the seashore other food sources may manifest themselves. Climate, geography, and socio-economic factors have a direct bearing on food availability and consumption.[30] Food habits naturally follow a similar 262
pattern: the classical tortilla of Mexico and the Middle American countries; the use of manioc in the Amazon area; the dehydrated potato (chuño) of the Andean altiplano, the all too starchy diet which has developed in the Caribbean areas, all have their explanation in the factors typical of each area. Furthermore, when natives come into contact with other cultures, deculturation processes in the dietary pattern often take place.[31] These deculturation processes are not limited to clashes between Indian and white cultures, such as prevail in most of Latin America, but to the adaptation and absorption of dissimilar cultures not of Indian origin, such as in Puerto Rico and the southwestern States of this country, where the Hispanic and the Anglo-Saxon mode of life meet. Procurement of food in industrial areas by low income groups may modify the diet considerably. With this in mind no gene-

[25] Spinden, H. J. The Chorotegan Culture area. XXI° Congrès International des Americanistes (529-545) Goteborg, 1925.

[26] Schultz, A. H. Anthropological Studies on Nicaraguan Indians. Amer. Jour. Physical Anthropology, 1926, *9*, 65-80.

[27] Harrower, D. E. Rama, Mosquito and Sumu, of Nicaragua. Museum of American Indian, Heye Foundation. 1925, *2*, 44-48.

[28] Conzemius, E. (see footnotes Nos. 1 and 23), also: Die Rama Indianer von Nicaragua. Zeitschrift fur Ethnologie, 1921, *59*, 291-362 (Berlin); Apuntes sobre algunos Nombres Geográficos Mosquitos en Costa Rica y Panamá. Revista de Costa Rica, 1922, 300-306; Les îles Corn de Nicaragua. La Geographie, 1929, *52*, 346-362 (Paris).

[29] Pijoán, M. Certain Factors involved in the Struggle Against Malnutrition and disease. Univ. of New Mexico Press, 1943. Inter-Americana Monographs.

[30] Eggan, F., and Pijoán, M. Some Problems in the Study of Food and Nutrition. América Indígena. 1943, 3, 9-23.

[31] Pijoán, M., and Elkin, C. A. Secondary Anemia due to Prolonged and Exclusive Milk Feeding Among Shoshone Indian Infants. Jour. Nutrition, 1944, *27*, 67-75.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

362 177 ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

164 The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

101 The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called [144] Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the 101 western region of the Mosquito coast was occupied by the Matagalpa 197 Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

101 The Miskito and small isolated bands of Suma Indians inhabit 361 the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive ad- [464] ditional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

3: Pijoan D-5 (ca. 1945) 1946
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262 The Indians also secure honey from wild honey bees. In the Coco
[222] territory there are various species of stingless bees *(Meliponidae)*. The honey cells are circular and the honey is yellow and slightly acid in taste, it does not crystallize when kept for sometime. Previous to the introduction of sugar cane the honey was used to sweeten food.

The most important food of the Miskito Indian is the banana, even though it is not indigenous to America. As such this is one of the few examples where a food originally foreign to a people was immediately accepted an chronically utilized. On the other hand the use of cereals so common throughout the Americas, is infrequent. The reason for this is that cereals are difficult to grow in this territory. The numerous insects which attack certain types of vegetable or plant life restricts agricultural enterprise. Furthermore there appears to be no need of cereals in the diet. Beans have recently been introduced and in some communities they have been raised for eating purposes.

Oils are easily prepared from coconuts or varieties of nuts. These are crushed and placed in boiling water, and in due course the oil rises to the surface and is skimmed off.

262
177 It can be said that the Miskito Indians living as they are, unmolested, by the banks of rivers and streams secure enough wild fruits, vegetables, fish and game to adequately supply the yearly food. To this is added small agricultural projects of their own, such as banana plantations, citrus fruits, etc. When these Indians become sequestered in larger villages or are removed from their community to work for mines, rubber collection, or as laborers for fruit companies, the dietary deteriorates. To secure food under these new circumstances they need money, a substance which is easily expendable and does not represent a material which may be needed in the future. The Rubber Development Corporation has had in many instances fed laborers on foreign foods which have not always agreed with or been agreeable to workers.

NUTRITIONAL EVALUATION OF THE DIET

121 The evaluation of the nutritional status of individuals from any single examination of their diet is difficult if not impossible. There are widely divergent wiews regarding the needs of the body, as to the extent and character of the food requirements, of the relative merits of various foods and as to the degree and frequency of intake of the nutritional components. A survey of dietary intakes will often make one suspect a deficiency and may warn the investigator what to seek for In the end clinical appraisal is the only satisfactory method. There is

1: Conzemius M-4, 5 (1921) 1932
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The Miskito readily intermarry with foreigners. They assimilate all races; the children always speak the language of the mother and grow up as Miskito, whether the father be "Creole," "Ladino," Carib, Negro, Sumu, Rama, Paya, North American, European, Syrian, or Chinaman. The villages between Wounta and Rio Hueso show this phenomenon to perfection. (Heath, a: 50.) Consequently the pure Indian tribes, as the Sumu, Paya, and Rama, are rapidly diminishing in numbers, whereas the Miskito, owing to the influx of fresh blood, are holding their own.

In spite of the fact that the Miskito have been since the seventeenth century in contact with buccaneers, British traders, and settlers, mahogany cutters, rubber bleeders, and Moravian missionaries, they have not changed considerably in their mode of life. Their tribal name appears first in the works of the piratical sea rovers, the English calling them generally "Moskite" and "Moskito," and the French "Moustique" and "Moustiquais."

Exquemelin (Engl. ed.: 250; French ed.: II, 264–265) calculates the number of the Miskito at about 1,500 to 1,700, including 200 Negro slaves. In those days they were divided into two subtribes having but little relation with each other. One of them lived at Cabo Gracias a Dios, the other at Moustique (=Sandy Bay?). The Indians from this latter place occasionally accompanied the buccaneer vessels, the others being less courageous on the sea. Dampier states, however, that the whole tribes comprised less than 100 men (Dampier: I, 7). Raveneau de Lussan (437–438), who writes about the same time, says that the Miskito of Cabo Gracias a Dios and lower Rio Coco were largely mixed with Negroes, while those at Sandy Bay were still pure Indians. In 1699 the Miskito occupied the seacoast from Cabo Camarón in Honduras to about 57 miles south of Brangmans River (=Wawa River?), where the territory of the Sumu began. The coast line of their territory had an extension of about 285 miles; they had, besides, two settlements on the lower Rio Coco (M. W.: 299). From the details given by the latter author the total population of this tribe numbered close to 1,000. In 1725 the Miskito numbered about 2,000 men altogether and were ruled by three chiefs (Lade). Bell (a: 250), who lived many years in the country, estimated the total Indian population of that territory at about 10,000 to 15,000, of which the Miskito numbered nearly one-half. The present writer calculates the total number of this tribe at about 15,000, of which at least one-third live on both banks of Rio Coco as far up as Rio Bocay, that is, 275 to 300 miles from the sea. In the Republic of Honduras, from Rio Coco to Rio Tinto, may be found from 3,000 to 4,000 Miskito, who inhabit the seashore and lagoons as well as the lower Rio Patuca. The remainder of this tribe lives in Nicaragua, from Rio Coco to Pearl Lagoon.

1: Conzemius M-4, 5 (1921) 1932
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restricted to two subtribes thereof. Lehmann's classification of the Sumu tribes is likewise unsatisfactory. With the word "Sumu" we have a convenient name for the whole of these various dialects; its use will avoid the sad confusion met with still in the recent literature.

All the male Sumu either know Miskito or Spanish (or even both), depending upon their proximity to Miskito or Ladino settlements. A few of them know a little English. Hardly any of the women are, however, able to speak a foreign tongue. Through Miskito many corrupted English words have passed into their speech, while words borrowed from Spanish are not so common.

RELATIONSHIP OF THE MISKITO AND SUMU

The relationship of the Miskito with the Sumu has already been established from linguistic evidence (Lehmann, b: 714–720) and is reenforced by a survey of the ethnology of the two tribes. In this connection the following Sumu tradition, which points toward a common origin, will be interesting. It was recorded in 1904 at *Alami-kañban* (Rio Prinsapolca) from a Sumu named Frederick, by the Rev. G. R. Heath, a Moravian missionary, who resided many years on the Mosquito Coast. The latter communicated it to Lehmann, who published it in 1910 (b: 717–718). This version was later reproduced by Joyce (9–10) and by Alexander (185–186):

> At Kaunapa Hill, on the left bank of Rio Patuca, a few miles below the mouth of Rio Guampú, there is a rock bearing the sign of a human umbilical cord, and from which were born the tribal ancestors, a Great Father (*Mĕi-sahana* "he who begot us")[3] and a Great Mother (*Itwana* or *Itoki*).[4] The Miskito and the Sumu are the descendants of these two primal ancestors.
>
> The first born were the Miskito who, disobedient and headstrong, as they are still to-day, cared little for the instructions of their ancestors and ran away to the seacoast.
>
> Then the Twahka or Tawahka were born, who consider themselves to this day the nobility among the Sumu.[5]
>
> Then followed the Yusku, who turned to evil ways; for that reason the other tribes made war upon them and almost exterminated them.
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> The youngest, the Ulwa, being according to the Indian custom the favorites, profited to such an extent by the instructions of the tribal ancestors that they became especially skilled in the secrets of medicine and incantation and won the name of *Boa*, "enchanters."[6]

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[3] *Wan-bĕikan* in the Miskito language.

[4] *Yapti-misri*, "Mother Scorpion," or *Yapti-tara*, "Great Mother," in the language of the Miskito.

[5] In Miskito the word *tawakya* means, however, "firstborn" and the parents thus call their first child.

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1: Conzemius M-4, 5 (1921) 1932
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In spite of the distribution of the Miskito over so vast a territory, the dialectical variations of their language are comparatively insignificant. Five dialects have been observed by the writer (vide Conzemius, d: 59–64). A small part of the Miskito has kept aloof from admixture with the Negro; these are called *Tāwira* "Heavy-haired."[2] Lehmann (c: I, 105, 107, 464) attempts to connect the ancient Chuchures of Panama with the Miskito, but this theory is barely acceptable. These Chuchures are said to have arrived in canoes from Honduras, and they settled in the neighborhood of Nombre de Dios. But their number gradually declined owing to disease and they finally disappeared altogether.

Many corrupted English words have passed into the speech of the Miskito, while words borrowed from Spanish are much less common. In certain regions, especially on the upper Rio Coco, a large number of Sumu words have been incorporated in the language.

GENERAL REMARKS ON THE SUMU

Inland from the Miskito, from Rio Patuca to Rio Punta Gorda, live the more primitive Sumu, who speak a related language. They inhabit chiefly the headwaters of the larger rivers or the affluents thereof. Owing to close intermarriage and lack of hygienic living conditions they are rapidly diminishing in numbers, and the day of their complete disappearance or absorption by the Miskito does not seem far off. Their total number is estimated at about 3,000 to 3,500.

The Sumu are split into different subtribes speaking various dialects which are almost mutually intelligible. These are known by the names *Twahka*, *Ulwa*, *Panamaka*, *Bawihka*, and *Kukra* (vide Conzemius, d: 64–73). The three first named of these subtribes number about 1,000 each, the Bawihka not more than 150, while the Kukra are practically extinct.

The Twahka inhabit the northern section of the Sumu territory and are found on the rivers Patuca (Guampú), Coco (Lakus and lower Waspuk), Wawa and Kukallaya. The Panamaka live on Rio Coco (Bocay and upper Waspuk) and on Rio Prinsapolca, while

[2] For the pronunciation of the Indian words the following phonetic system has been used:

a, e, i, o, u, correspond to the sounds of these vowels in German or Spanish.
ai as *ai* in "aisle."
au as *ou* in "how."
oi as *oi* in "boil."
ŋ as *ng* in "sing."
x as Spanish *j* or German *ch* in "ach" or Scotch *ch* in "loch."
y is always a consonant.
Nasalization of vowels is indicated by the tilde (~) as in Portuguese.
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1: Conzemius M-4, 5 (1921) 1932
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1: Conzemius M-4, 5 (1921) 1932
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756 and they are not to be distinguished in their outward appearance from the ordinary mortals.

According to Miskito traditions their art was introduced by a white man from the east, known as *Almuk-aura* (lit.: "old drift man"), who was apparently some sort of culture hero. This reminds of the Mexican myth dealing with *Quetzalcoatl*, who also came from the east and was likewise a shaman. The first Sumu shaman is said to have been a man named *Ado* or *Mamañ* [80] (Grossmann, b: 4).

THE SUKYA.—This is the name of the lowest of the two kinds of 756 sorcerers found originally among the Miskito and Sumu. The name 171 is also current among the neighboring tribes, as the Paya and the Rama, although the indigenous designations for the priest-doctor in 196 these two languages are respectively *wata* and *turmala*. The term sukya (sukia, suquia) [81] is also employed by the Mova and the San Blas Indians of Panama, and likewise occasionally by the Talamanca of Costa Rica. In the dialects of the Talamanca region, however, the native name is *teukur* (or *teugur*, *teugru*, *teugrūh*, *teuku*). In the various Costa Rican languages the elements *teu* or *ču* mean "to drink" or "to suck," and they occur in words which may be translated by "milk," "female breast"; this is also the case with other Central American languages, as Maya-Quiché, Paya, Mixe-Zoque, Lenca, Xinca, Sumu, and Guaymi-Dorasque. It would appear, therefore, that the word sukya is etymologically related to the above terms, and that originally it meant something like "sucker," as the native medicine man extracts the material cause of the pain or ill being by the action of sucking.[82]

756 The sukya is generally a man above the average Indian in intelligence.[83] His office is generally hereditary, but frequently he is succeeded by his nephew or his son-in-law. In practically every large village of the Miskito and Sumu habitat there is a sukya to be found; Wickham (c: 207), however, did not observe any such sorcerer among the Ulwa of Rio Escondido. The sukya communicates with the unseen powers [84] and may use his art to the welfare or destruction of

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[80] *Mamañ* is, however, the Sumu name for "mother."

[81] The first mention of this name is found by M. W. (300, 302, 304, 306, 307, 308, 309) in the form *succhea*.

[82] See Rudolf Schuller, Las Lenguas Indígenas de Centro América. San José de Costa Rica, 1928 (pp. 53–54).

[83] Occasionally the sukya is an elderly woman. A young woman is, however, not qualified for this office, as she would be exposed too much to the influence of evil spirits and other supernatural dangers, especially at the menstrual period and at childbirth.

[84] Dampier (I, 9) already states that the devil, called *Wallessaw* (= *walasa*, *ulasa*, or *lasa*) by the Miskito, appears to their priest when they desire to speak to him on urgent business. M. W. (308), who writes a little later, that is, about 1699, spells that word *wallasee*.

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1: Conzemius M-4, 5 (1921) 1932
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Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[7]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (27). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Casiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[7] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

1: Conzemius M-4, 5 (1921) 1932
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144 On the other hand, Santaella Melgarejo, in a report dated Guatemala, April 3, 1715 (Peralta, b: 78–80), states that the vessel in question was English and that it was wrecked in 1652 on the Cajones or Tiburones Keys to the east of Cabo Gracias a Dios. Fearing the Indians from the mainland, the Negroes settled at first at some keys south of the mentioned Cajones (undoubtedly the Mosquito Keys), and once friendly relations were established with the natives, they established themselves at Cabo Gracias a Dios.

Again it is said that the vessel in question was Spanish and bound for Cuba (Raveneau de Lussan: 437–438; Heath, a: 51).

Our source material pertaining to the origin of these slaves is therefore very meager and contradictory. According to a report of Fray Benito Garret y Arlové, dated November 30, 1711 (Peralta, b: 57), one of these Africans, an old man named Juan Ramón, who lived in Granada (Nicaragua) related that about one-third of his countrymen were captured by the Indians and reduced to slavery. The others took to the bush, whence they carried on a crude warfare with the aborigines, who were finally compelled to retreat toward the interior. About 1672 the number of these African slaves held by the Miskito was estimated at about 200; in those days they had already adopted the language and customs of the Indians (Exquemelin, Fr. ed.: II, 276–277).

As a result of the above, the Miskito from Cabo Gracias a Dios to Sandy Bay had already a large admixture of African blood toward the end of the seventeenth century. In the course of time refugee slaves from the English settlements and more recent immigration of Negroes and Mulattoes (chiefly from the West Indies) have contributed to the spreading of the African type, so that to-day Negro characteristics may be observed in almost every village. One of the subtribes of the Miskito, the *Tāwira* who live a short distance inland, from Sandy Bay to Wawa River, however, have refused to mingle their blood with that of the Africans. It is only in recent years that they have begun to intermarry with the mixed Miskito, especially with newcomers from Rio Coco, so that soon a Miskito of pure Indian blood will be a thing of the past.

● 197 We do not know to what extent these African slaves have influenced the original language of the Miskito, for such researches would entail exhaustive comparative studies with the surrounding Indian languages (Sumu, Paya, Rama), with the Creole dialects of the West Indies, and the languages of the Guinea Coast. The vowel scale is exactly the same as in the Jamaican Creole dialect; several of the peculiar phrases of everyday life are found literally translated into English in Jamaica (Heath, a: 51).

173 We are also indebted to Mr. Heath for a Miskito migration legend which is said to have been given out as authentic by Eduardo Pereira,

1: Conzemius M-4, 5 (1921) 1932
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721 selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

721 Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras) to Chiriqui Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

721 The place names belonging to the Miskito language, which may be met with all along the Atlantic shore of Costa Rica and Panama as far south as King Buppan's Bluff, owe their origin to the above-mentioned marauding expeditions (Conzemius, a: 300–306). Still permanent settlements were not made by the Miskito on that vast region, the southern limit of their habitat being formed by Pearl Lagoon, where they established themselves during the latter part of the eighteenth century. About that same period they also spread up some of the larger rivers, as the Patuca, Guagua (Wawa), Cucallaya, Prinsapolca, Rio Grande, and especially Rio Coco; on the last-named stream they may be found as far up as Bocay, that is, about 300 miles from the sea by the circuitous course of the river.

727 TREATMENT OF PRISONERS.—As stated before, the Miskito began their slave-hunting expeditions into the territory of their neighbors toward the end of the seventeenth century. The captive women and children were either kept as slaves (M.: *alba* [1]; S.: *warau*) or they were sold to the Jamaican traders who arrived occasionally on the coast. The boys, when arrived at the age of puberty, were allowed to take a Miskito wife, and the children of such unions grew up as free members of the tribe.

721 Slave-hunting expeditions in seagoing canoes were particularly directed to the Talamanca region (southeastern Costa Rica), where many Tiribi (Terbi) Indians were reduced to slavery. The same fate met the aborigines living around Chiriqui Lagoon (M. W.: 302; Peralta, a: 20, 93, 95; Peláez: II, 156; Young: 35; Conzemius, a: 300–301). Many references to the Miskito slavers may also be

[1] This word has evidently some connection with *albawina*, by which name the Miskito called the Sumu formerly, or perhaps all their Indian enemies in general. The Black Carib or Garif apply to the Miskito the name *idudu*, which word likewise had originally the meaning of "slave." (Compare *iteto* "slave" in Father Gumilla's work.)

3: Pijoan D-5 (ca. 1945) 1946
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144 In 1875 at the time when the relationship of Miskito and Sumu lan-
175 guages was still unknown, Zúñiga Echenique[19] considered the Miskito Indians as the offspring of fugitive slaves with *Twahka* women (see appendix A). Of the existing Sumu tribes today the *Bawihka* is the
[17] one wich linguistically and ethnologically is the closest to Miskito. The *Bawihka* formerly occupied the area of the coastline where the first Europeans made contact. The fact that Echenique had suggested that the Miskito were derived from slaves and Indians and the fact that the *Bawihka* were on the coast induced Conzemius[1] to deduce that intermarriage between Negroes and Indians, an ordinary occurence today, was a possibility in earlier times.

In 1641 a slave ship was wrecked off Cabo Gracias a Dios. The Africans were on a ship commanded by Lourenço Gramalxo.[20] While on the high seas the Negroes revolted and mastered the ship and not knowing navigation allowed the vessel to be carried by trade winds, where it became wrecked on the Mosquito keys. The Negroes reached the mainland and were made slaves by the Indians. However, they were allowed to inter-marry and their children became free members of the tribe. There appears to be some controversy as to the owner of the vessel and the year it foundered.[21 y 22]

As a result the Miskito from Cabo Gracias a Dios to Sandy Bay developed an admixture of African blood. This Mixture was enhanced by the coming of other refugee slaves and the more recent immigrations of Negroes and mulattoes from the West Indies. The extent to which
[17] the Indian language was influenced by the African newcomers is unknown; the vowel scale of many people in certain villages is the same as the Jamaican creole dialect.[23 y 24].

000 In recent times important contributions with regard to the Miskito

[19] Zúñiga Echenique, Melquisidec. Descripción geográfica del departamento de la Mosquitia, practicada en el año de 1875. Madrid, 1905.

[20] Vide: Peralta, M. M. Costa Rica y la Costa de Mosquitos. Madrid-Paris, 1898; footnote N° 3; Edwards, B. The History, Civil and Commercial, of the British West Indies, 5 vols. London, 1819. Heath, G. R., quoted by Conzemius (footnote 1), loc. cit. p. 17.

[21] De Kalb, Courtenay, Nicaragua: Studies on the Mosquito Shore in 1892. Jour. Amer. Geographical Soc. of New York. 1893, *25*, 236-288. versus opinion expressed by Peralta (footnote 20).

[22] Lehmann, W. Ergebnisse einer Forschungsreise in Mittelamerika und Mexico. Zeitschrift fur Ethnologie, 1910, *42*, 687-749.

[23] Conzemius, E. Notes on the Miskito and Sumu Languages of Eastern Nicaragua and Honduras. Internat. Jour. Amer. Linguistics, 1929, *5*, 57-115.

[24] Heath, G. R. Notes on Miskito Grammar and on other Indian languages of Eastern Nicaragua. Amer. Anthropologist. 1913, *15*, 48-62.

3: Pijoan D-5 (ca. 1945) 1946
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ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the western region of the Mosquito coast was occupied by the Matagalpa Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

The Miskito and small isolated bands of Suma Indians inhabit the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive additional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

1: Conzemius M-4, 5 (1921) 1932
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MUSICAL AND SIGNALING INSTRUMENTS

The music is chiefly instrumental; vocal music is seldom heard, and is chiefly performed by the sukya in practicing his incantations.

DRUM.—Our common drum, known by its English name (M.: *drum;* S.: *durum*), is the favorite musical instrument among the men; it has been extremely popular ever since its introduction by British garrisons during the eighteenth century. The Indians make it themselves and beat it at their drinking bouts with the aid of the wooden drumsticks (M.: *mihta;* S.: *tiñni*).

The horizontal hollowed-out log drum with an H-shaped cutting made longitudinally (the *teponatzli* of the Mexicans and the *tunkul* of the Maya), which is used for signaling purposes in different parts of America and Melanesia, appears to have been unknown in the region under consideration. The common drum is sometimes used to advise the neighbors of a miala feast.[81]

The upright native drum (M.: *kuñbi, kuñbaya;* S.: *pañtan, panatañ*) is goblet shaped and hollowed out from a solid block of mahogany or cedar; it has a height of about 3 feet at least, including the pedestal base, which is carved from the same block of wood. The smallest diameter is at the bottom just above the pedestal support. The drumhead at the top is formed by a piece of animal skin (deer, toad, iguana, or tapir); it is held taut by means of a strong rope which is attached to the pendent edges of the skin and firmly tied to the shell of the drum. It is beaten with the hand and used only at the festival of the dead. This instrument corresponds to the *huehuetl* of the ancient Mexicans.

RATTLES.—Round or egg-shaped gourd rattles, the common playthings of our babies, figure among the musical instruments of the Mosquito Coast, and are found in use all over the New World. They are handled chiefly by the women, particularly at the festivals of the dead, in order to mark the measure at the dances. These rattles are made from the fruits of the calabash tree, from which the pulpy contents have been removed through a circular opening at the stem; small stones, pebbles, hard seeds, or beans are then introduced. Finally, a close-fitting stick, which acts like a handle, is introduced; it tapers somewhat toward the distal end, which is thrust entirely

[81] The foreigners living on the Mosquito Coast jokingly use the phrase "bush telegraph" to refer to the rapid way in which news sometimes travels, but there is no such mysterious way used by the Indians. It is claimed that the Miskito living on the savanna near the sea occasionally spread news by the signal of making a savanna fire. But such a signal could not be very definite as these fires are generally kindled for no purpose but to burn the grass and low thicket. Sometimes men from villages far apart come within shouting distance of one another when hunting. It is also claimed that some men have a "whistling language," and are able to communicate any sentence correctly by whistling.

1: Conzemius M-4, 5 (1921) 1932
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514 not go out to encounter his visitor, but receives him with a handshake in his hut or at the doorway.

Among the Sumu (Twahka and Panamaka) I have observed occasionally that the guest walks into the house of his host without speaking a word. The latter then addresses him with the words *ñwana man* "have you come?" to which the other replies *ñwana yañ* "I have come." He is then motioned to one of the low wooden seats or to a hammock. The master of the house then calls his wife or daughter to bring him some wabul or other beverage or food. If the guest is well known to the women they will decry the drink or food offered, while the guest is supposed to praise it. If they do not know each other the wabul is brought without the exchange of a single word. The visitor is never questioned while he is eating, as that would be a breach of etiquette. When he has finished with the food the master of the house will inquire where he comes from and what brought him to his dwelling. He generally asks him also if he saw plenty of game on his journey and if the latter is lean or fat. When the visitor departs he merely says *yawa yañ* "I am going," and he goes, while the host replies, almost laconically, *yawa man* "are you going?"

●201 KISSING.—Among these Indians kissing is absolutely unknown. They manifest their affection by merely smelling the scent of the other person, rubbing their nose against the latter's cheek with a snuffing action; this custom prevails in large areas of the world. Parents rub their nose against the face, neck, or body of their baby, inhaling the scent as in snuffing, but they never touch the child's skin with their lips. The words "to kiss" or "to smell" are translated by the same phrase (M.: *kia walaya;* T., P.: *waya dakanin;* U.: *wiñka dahnaka*), which literally means "to hear the scent." Among the Sumu (and the neighboring tribe of the Rama as well) our manner of kissing is abhorred and looked upon as a mild form of cannibalism.

TIME RECKONING

211 PYU OR PERUVIAN QUIPU.—Primitive forms of the complicated *quipu* of Peru are in existence among both Miskito and Sumu. They consist of a single cord with knots and are called *pyu* or *piu* (S.: *ma*), a word which is etymologically related to *quipu*. When the Indian departs for a voyage he gives his wife a string or cord with as many knots therein as the number of days he expects to be absent, each knot corresponding to a day. The woman severs one of these knots every night, and in this manner she knows at a glance at the *pyu* how many days her husband will still be absent, for the latter arrives, if well, on the very night on which the last knot is cut off. When

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the Indian is working as a day laborer he will keep track of his time by tying a knot in a string every evening, and finally compares the total of the knots with the amount of days credited to him by his employer. These small cords also take the place of cards of invitation for a great festival. One of them is carried by the messenger to the headman of each one of the invited villages. Each night one of the knots is severed, the last one representing the day of the meeting.

Instead of knotted strings there are also other systems of *pyu*, as, for instance, tablets or pieces of wood on which notches have been cut with a knife, or wherein small holes have been drilled for the reception of thin sticks. The women also make use of calabashes in which they place or from which they withdraw a small pebble every day. Each one of these notches, sticks, or stones signifies a day.

The presence of these simplified *quipu* among the Miskito and Sumu has already been observed by Roberts (270) and by Sapper (c.: 265). Similar systems may be found among the Talamanca tribes of Costa Rica and in many parts of South America and Oceania. Very complicated systems are known only from the ancient Peruvians; in their elaborate *quipu* the knots varied in value according to their coordinate placing. They were used for calendary calculations and also for statistics.

DAYS.—Great distances from one place to another are expressed by the number of "sleeps" or nights that one will have to sleep on the journey.

The approximate time of the day is not observed from the length of the shadow, but directly from the position of the sun. The Indians will point to the heavens and indicate the approximate position of that celestial body at the time at which a certain action took place.

YEAR.—The Indians calculate the year according to the return of the dry season, or summer; both the words "year" and "dry season" are expressed by the same word (M.: *mani;* T., P.: *kure, kuri;* U.: *mamaka*). The approach of the rainy season, or winter (M.: *li mani, li tâim;* S.: *wasma*), or the dry season, is known from the behavior of the animal and vegetable world. Very few Indians are able to give their approximate age. The great eruption of the Cosegüina in 1835 formerly afforded a convenient reckoning period to start from.

MONTHS.—The year was formerly subdivided into 13 months or "moons" (M.: *kati;* S.: *wâiko*) of 29½ days each, corresponding to the average duration of a lunar revolution. As it was known, however, that the solar year corresponds to considerably less than 13 lunar revolutions, the thirteenth month was occasionally dropped in order to keep the moon in adjustment with the seasons. Nowadays

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324 172 Pownall (319) refers to another of these bowls in the British Museum, which belonged to a collection brought from Jamaica by Sir Hans Sloane. This is perhaps the one depicted by Joyce (p. 74, pl. VI, fig. 1) which resembles No. 3 described above.

In 1921 the writer found a number of these vessels, but all badly broken up, on the right bank of Rio Paulaya. Some of them were not detached from the quarry out of which they were formed. It is, however, not known from what site the marble was quarried. Bowls of similar material and technique have also been met with in the Bay Islands and in the valley of Rio Ulua. A large specimen is in the Museum of the American Indian, Heye Foundation (Hodge: 56).

532 172 STATUES OR CARVED PILLARS.—At certain old sites may be found some high slabs of stone which were originally placed upright, reminding one of our tombstones. Nearly all of them have now tumbled down. Occasionally some greatly obliterated geometric designs, or spirals, may be found on them.[28]

Spinden (539) pictures a stela or stone pillar on Rio Tocomacho (Honduras) which is 8 feet in height and nearly a foot square. It is covered on all sides with pictographic designs, chiefly spirals and scrolls; on one of the four faces there is a grotesque figure with a reptilelike creature on its head. Such stone pillars may also be found in other parts of the Mosquito Coast, but they are not common. Large stone statues, attaining as great a height as 12 feet, are, however, the outstanding feature of the archeology of the Pacific half of Nicaragua, especially of the great lake region.

Le Baron (217–222) describes and depicts some stone ruins from the left bank of Rio Prinsapolca, about 134 miles above its mouth. They consist of three monoliths, about 8 feet high, forming a triangle; the ground between them was paved with stones. These monoliths had fallen to the ground and were broken; on some of the faces there were rude carvings, greatly obliterated.

CARVED ROCKS

212 172 Pictographs may be found on the rocks in the bed of nearly all the larger streams, generally at the rapids and falls. They must have been made many centuries ago, for they are considerably waterworn, and often may be followed easier with the finger than with the naked eye. Many of these carved rocks are visible during the dry season only and are completely under water during the rainy months, owing to the rise of the rivers. (Fig. 1.)

WHERE THEY ARE FOUND.—Such carved rocks have been observed by the present writer at different places on the Rio Coco (at Wirapani,

[28] The modern Indians have no traditions concerning these ruins found in their territory, and ascribe them to the evil spirits.

1: Conzemius M-4, 5 (1921) 1932
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Waspuk, Kiwras, above Raiti, at Kunkun mawan and at Tawit); they are known to exist also in the rivers Plátano, Patuca, Wawa, Prinsapolca, Tuma, Punta Gorda, Indio, and Maíz. They appear to be particularly numerous on the Siquia and Mico, which two streams together form the Rio Escondido or Bluefields River (Boyle, b: I, 296–299; Pim and Seemann: 401; Wickham, b: 243, 245; Belt: 52–53). Some extravagant stories of great statues carved in human and animal shape and hewn out of a solid cliff on the upper Rio Mico have been circulating on the coast, but it appears that these giant statues are merely rude carvings on the rocks similar to the ones found in other parts of the country. Carved rocks are found in many rivers emptying into the Caribbean Sea, and a good account of those met with in South America has been given by Koch-Grünberg.[29] The geographical names Gualpulban (M.: *walpa-ulbañ*), Quiulna (T., P.: *ki-ulna*) and Quiultan (U.: *ki-ultañ*), which are found scattered in various parts of the Mosquito Coast, may furnish a clue to the presence of such pictographs in the neighborhood. These various names mean "written rock" or "painted rock" and correspond to the Spanish "piedra pintada."

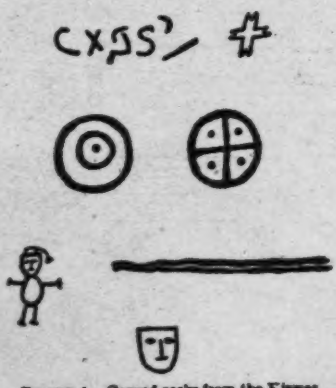

FIGURE 1.—Carved rocks from the Kirwas Rapids (Rio Coco)

MOTIFS.—The carvings consist chiefly of very curious figures, which it is often difficult to identify. Sometimes they represent human figures, but the greater part of them appear to be animal designs: jaguars, alligators, monkeys, frogs, tortoises and serpents. Occasionally geometric figures, as spirals and scrolls, are depicted, but floral designs are conspicuous by their absence. Sapper (a: 275) pictures some carved rocks from various parts of Rio Coco: Valpa úlpan (=Wirapani), Kiulna (=Kunkun mawan) and Davuit (=Tawit). A photograph of a large bowlder with carved figures from Rio Plátano is given by Spinden (537).

ARTISTS.—We do not know who were the authors of this work. The Miskito are by all means out of the question, for they are comparatively new immigrants into the regions where pictographs are to be found. They ascribe them to the Sumu, who formerly occupied most of the territory in question. But the latter Indians are unanimous in declaring that this work was done by the evil spirits (*walasa*) at a time when the rocks were still soft.

[29] Südamerikanische Felszeichnungen. Berlin, 1907.

1: Conzemius M-4, 5 (1921) 1932
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WRITING.—The carvings on one of the bowlders at the Kiwras Rapids on Rio Coco are said to resemble somewhat the characters of the Latin alphabet. Wickham (b: 245) heard of some "writing" on rocks of Rio Mico, which he considered—quite erroneously of course—inscriptions in Latin made by the early Jesuit missionaries. Neither Miskito nor Sumu appear to have possessed the art of writing as did their western neighbors, the Nicarao and Chorotega. According to Oviedo the two latter tribes had books of parchment made from deer skins. Picture writing was also practiced, and is still, by the Cuna Indians of Panama, as has recently been ascertained by Nordenskiöld.[39]

RUBBER COLLECTING

In former days the Indians used to collect rubber from a wild-growing tree (*Castilla* sp.), which is found nearly all over the country. This industry started about 1860, first on Rio San Juan, and gradually spread to the remainder of the Mosquito Coast. The Indians sold their rubber to the local merchants, who generally made large advances to them. About 1912 and 1913, when the export of rubber ceased, owing to the low price caused by the large production of plantation rubber in the British and Dutch East Indies, many Indians found themselves heavily in debt to the merchants.

The rubber collectors or "huleros" first made a rude ladder out of the lianas that hang from the trees; this was done by tying short pieces of wood across them with the aid of smaller lianas. Later iron spurs were introduced and attached to the feet to climb the trees. With the machete they then scored the bark with cuts having the shape of the letter V, the point being downward. Such cuts were made all the way up the trunk, at a distance of about 3 feet from each other; they extended nearly round the tree, but the latter was on no account to be completely girdled. At the bottom of these series of cuts a spout was inserted to conduct the latex juice into buckets or other containers. In about half an hour all the whitish milk had run out of the tree.

Afterwards the latex was strained and caused to coagulate by the addition of an alkaline decoction made from the juice of the chajmol vine (*Ipomoea bona-nox* L.; M.: *tatako;* T. and P.: *tutuk;* U.: *ulupuy*) or from that of a liana (*Calonyction speciosum*); this was combined with the latex in the proportion of 1 pint to 2 gallons. To prevent putrefaction coagulation must be effected within about 24 hours after the collection of the milk. The resulting mass was then made into round flat cakes, which were exported under the name "sheet rubber"

[39] Picture Writings and Other Documents. Comparative Ethnographical Studies, vol. 7, part 1 (1928) and part 2 (1930).

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink prepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

● 221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January	*Aladi cati, Inupu cuti:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

3: Pijoan D-5 (ca. 1945) 1946
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February	*Cusnu cati, isla cati:* tortoise time, iswilly lizard time. Few citrus fruits, coconuts or vegetables.
March	*Cocamuk cati:* iguana season. Few green vegetables or fruits.
April	*Willi wantca cati:* male turtle time. Coconuts, very few vegetables, few bananas.
May	*Willi Mayrhen cati:* female turtle time. More bananas, plantains and coconuts.
June	*Li cati:* rain month. Same as May.
July	*Pastara cati:* high wind time. Same as May, a few more greens, bananas.
August	*Sicla cati; wis cati:* ? Few citrus fruits, more greens, bananas.
September	*Wis cati:* wis month.
October	*Sauhi cati, prarki cati:* south wind month, hurricane time. Food consumption depends to a great extent on the weather. Wild fruits, citrus fruits.
November	*Yahibra cati:* north wind time. Citrus fruits, wild fruits.
December	*Krismas cati:* Christmas month. Fewer vegetables and fruits consumed.

During May, June and July no greens of any kind are available; this is true also during late December and January. Meat consumption remains fairly constant.

Average meat intake per day (June)	960 grams.
Other fruits and foods (June)	400 grams.

The above was the approximate daily consumption of my head boatman, Ramón. Others ate a little more or a little less, but the proportion was about the same. Apparently, members of most families consume about the equal amounts of meats and vegetables as he did. On the other hand, following a hunt, the meat consumption increases significantly and sometimes an entire animal is eaten at one sitting. Be it noted that meat is usually secured from hunting or fishing. This 262
is somewhat striking when one observes the large numbers of turkeys 231
among the families. It is assumed that as such these birds would be eaten frequently but instead they are consumed rarely; they are household pets. To some extent this is true of chickens. Pigs, on the other hand, are more frequently eaten; they require little care and in general forage for themselves. Cowmeat, steermeat, heifer meat, etc., is obtained from the occasional slaughter of domestic cattle. The latter are plentiful.

1: Conzemius M-4, 5 (1921) 1932
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231 sp.), agouti (*Dasyprocta* sp.), deer (*Odocoileus* sp. and *Mazama* sp.), squash or coati (*Nasua narica*), and raccoon (*Procyon lotor*).

Wickham (b: 163; c: 200) even saw a tame otter among the Ulwa of Rio Escondido. The Indian women have great patience in taming young animals and they will suckle them as they would their own children. These animals are generally caught while still very young.

INDIGENOUS BIRDS.—The domestic turkey is now found in almost every hut. Among the other native birds which are usually tamed by the Indians are the following: curassow (*Crax* sp.), guan (*Penelope* sp.), mountain hen (*Tinamus* sp.), muscovy duck (*Cairina moschata*), macaw (*Ara* sp.), parrot (*Chrysotis* sp.), parrakeet (*Conurus* sp.), toucan (*Ramphastos* sp. and *Pteroglossus* sp.).

The birds are taken out of the nest while still young, but old birds are occasionally tamed. When slightly wounded or when shot with a blunt arrow they are carried home and kept for a few days without any food. After that they become generally very docile and are ready to eat the food given to them.

231 NATIVE BEES.—Various species of the native stingless bees are
263 occasionally found in a semidomesticated state around the Indian huts. About a dozen species are found in the country, all belonging to the family of the Meliponidae. The largest of them is about the size of the European bee. The honey cells are circular and the honey is yellow and slightly acidulous in taste; it does not crystallize when kept for some time, as is the case with that of the European bee. It is slightly laxative and is generally diluted with water, either fresh or after having been allowed to ferment. Previous to the introduction
237 of sugar-cane, honey was used to sweeten food. The wax, which is light brown in color, is used as "cement" in the making of arrows, spears, and other implements; in certain regions it is also used for
● 222 lighting purposes. The Indians also collect the honey from the bee nests in the forests and store it in large bamboo joints.

231 DOMESTIC ANIMALS OF FOREIGN ORIGIN.—The most common domes-
177 tic animals are the dog, pig, cattle, and fowl, while the horse, cat, goat, and sheep are rarely seen. All these animals are of foreign origin and have been introduced from the interior of Honduras and Nicaragua. Among the Indians they are known almost invariably by their Spanish or English name.[40] When the Indian family travels all the livestock is taken along.

231 CATTLE.—Cows (M.: *bip*, from the English "beef"; S.: *toro*, from the Spanish *toro* "bull") are owned by many Indians, especially those living in the savannas. They feed on the coarse grass, there being no artificial pastures made by the Indians. The cows are rarely

[40] The Ulwa, however, call the cow and the horse by the native names they apply to deer (*sana*) and tapir (*pamka*), as do a number of other tribes in Central and South America.

1: Conzemius M-4, 5 (1921) 1932
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On the Atlantic slope of Central America this palm is grown as far north as Rio Tinto in Honduras, but on the Pacific side its northern limit is formed by Lake Nicaragua. It is found only in the cultivated state; the palms found occasionally in deserted regions indicate former village sites. A wild variety, bearing inedible small fruits, is found on the Mosquito Coast to the south of Bluefields; it is there known as "pejivalle de monte" or "wild supa."

COCONUT PALM.—The coconut palm (*Cocos nucifera* L.), called *kuku* by both tribes, is found in a semiwild state all along the seashore; some of the inland Indians have also planted a few trees. This palm is not mentioned by the buccaneers who visited the Mosquito Coast, as Exquemelin, Dampier, and Raveneau de Lussan; it was met, however, by M. W. (310). The Indians make little use of the coconut, except that they drink the water and eat the tender kernel of the young nut; very few of them extract the oil from it, as do the Creoles and Black Caribs.

SUGARCANE.—Sugarcane (*Saccharum officinarum* L.; M.: *kayu*, from the Spanish "caña"; S.: *tisnak*) was brought by the Spaniards during the early part of the sixteenth century to the New World, first to the West Indies and later to the mainland.[a] The various buccaneer authors do not say anything of its occurrence among the Miskito. The first mention of this plant on the Mosquito Coast is found by M. W. (310), who states that the Miskito King Jeremy had some in his plantation, but in those days (1699) the Indians did not yet know how to make sugar from the juice. Nowadays they drink the juice of this plant, after having allowed it to ferment; they also boil it into sirup and brown sugar.

CACAO.—Although an indigenous tree, cacao (*Theobroma cacao* L.; M. and S.: *kakau*) is cultivated only by the Ulwa, but in former days it was also grown by the Miskito (M. W.: 308, 310). The Indians also collect the pods from the various varieties of cacao trees which grow wild in shady parts of the forest.

Cacao pataste or "werbra cacao" (*Theobroma bicolor* Humb. and Bonpl.; M.: *uraň;* S.: *kuru*) is cultivated, however, in the neighborhood of the huts.

CACTUS.—Sloane (a: p. LXXVIII) reports that the Miskito cultivated the Opuntia cactus for the breeding of the cochineal insect; this must be a mistake, however, for that industry was limited to the Indian tribes of the Pacific slope and of the interior, particularly in Mexico, Guatemala, Salvador, and Honduras.

FRUIT TREES.—The most common of the indigenous fruit trees, outside of the ones enumerated above, are the following: Pineapples

[a] Hernán Cortés, the great conquistador of Mexico, introduced the plant from Haiti into Honduras (Trujillo) as early as 1526.

1: Conzemius M-4, 5 (1921) 1932
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251 Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

252 262 VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

262 177 824 The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

222 WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lāna, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramāra;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *vaham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tawa*) and several species of granadillas or fruits of passion

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*).

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer.

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [46]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul.

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, takra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukya uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them.

[46] Bell (b: 27) states that the Creoles of Bluefields made plantains into "*foofoo,*" that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "*foofoo,*" corrupted by the Miskito into *pupu,* is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

1: Conzemius M-4, 5 (1921) 1932
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The eating of earth (M.: *taûka;* S.: *sdû*), clay (M.: *slâûbla;* S.: *sdû*), sand (M.: *dûya;* S.: *kdûlmak*), and charcoal (M.: *kwasko, tmasko;* S.: *kusmak*) is very common among women and children.

NONFERMENTED BEVERAGES

DRINKING WATER.—The whole country is well watered and the Indians obtain their drinking water from the running streams on the banks of which their settlements are generally situated. Wells are also dug by those living near the sea.

WATER LIANAS.—Several varieties of water lianas, varying in size from 3 to 5 inches, can be found throughout the forest. When the stem is merely cut through only a few drops of water will issue; the vine must then be severed immediately about 2 or 3 feet farther down, whereupon a continual stream of water will flow, quite sufficient to quench the thirst of a person. The Indian holds the severed part of the stem in a vertical position, allowing the sap to run directly into the mouth. The vine must be cut above first, otherwise the sap will ascend so rapidly that hardly any will be obtained.

HONEY.—The Indians are very fond of the honey (M.: *nas[illegible] amak*) from the various species of wild, stingless bees which make their nests in hollow trees. The entrance to the nest is easily ascertained by watching the little bees flying about. The Indians either climb or fell the tree in order to get possession of the honey. The latter is always taken as a beverage, after being mixed with water, but even in its natural state it is not viscid, but almost as fluid as water. It has a subacid, highly fragrant taste. The Indians, while away from home, may make a meal of the contents of such a bee nest, but the average foreigner does not care much for it, and finds it greatly inferior to that of the European domesticated bee. The natives collect in bamboo joints what they are unable to consume immediately to take home to their family.

MILK.—The consumption of cow's milk is not general. When I inquired the reason from some Sumu of the upper Rio Waspuk they answered that they are not the descendants of cows, to drink their milk.

BANANAS AND PLANTAINS.—A great variety of nourishing drinks of vegetable origin are prepared by the Indians under consideration. Bananas are consumed largely in the shape of a pop, known locally by the name "wabul." The bananas for this purpose are used generally in the green state, before their contained starch has turned into sugar. They are peeled and cooked in an iron pot. Then the water is poured off and the bananas are thoroughly mashed in the same pot with the aid of a short wooden stick. During this process cold water is added little by little, and the whole is well stirred. No salt

3: Pijoan D-5 (ca. 1945) 1946
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262 The Indians also secure honey from wild honey bees. In the Coco
122 territory there are various species of stingless bees *(Meliponidae)*. The honey cells are circular and the honey is yellow and slightly acid in taste, it does not crystallize when kept for sometime. Previous to the introduction of sugar cane the honey was used to sweeten food.

The most important food of the Miskito Indian is the banana, even though it is not indigenous to America. As such this is one of the few examples where a food originally foreign to a people was immediately accepted an chronically utilized. On the other hand the use of cereals so common throughout the Americas, is infrequent. The reason for this is that cereals are difficult to grow in this territory. The numerous insects which attack certain types of vegetable or plant life restricts agricultural enterprise. Furthermore there appears to be no need of cereals in the diet. Beans have recently been introduced and in some communities they have been raised for eating purposes.

Oils are easily prepared from coconuts or varieties of nuts. These are crushed and placed in boiling water, and in due course the oil rises to the surface and is skimmed off.

262 It can be said that the Miskito Indians living as they are, unmo-
177 lested, by the banks of rivers and streams secure enough wild fruits, vegetables, fish and game to adequately supply the yearly food. To this is added small agricultural projects of their own, such as banana plantations, citrus fruits, etc. When these Indians become sequestered in larger villages or are removed from their community to work for mines, rubber collection, or as laborers for fruit companies, the dietary deteriorates. To secure food under these new circumstances they need money, a substance which is easily expendable and does not represent a material which may be needed in the future. The Rubber Development Corporation has had in many instances fed laborers on foreign foods which have not always agreed with or been agreeable to workers.

NUTRITIONAL EVALUATION OF THE DIET

121 The evaluation of the nutritional status of individuals from any single examination of their diet is difficult if not impossible. There are widely divergent views regarding the needs of the body, as to the extent and character of the food requirements, of the relative merits of various foods and as to the degree and frequency of intake of the nutritional components. A survey of dietary intakes will often make one suspect a deficiency and may warn the investigator what to seek for In the end clinical appraisal is the only satisfactory method. There is

4: Conzemius M-4, 5 (1921) 1932
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mangroves, reeds, and coarse grasses. Then follows the real tropical forest with very fertile soil, consisting on the surface of vegetable humus. In order to penetrate the forest the hunter has to cut his way through the tangled mass of vines and epiphytes with the aid of his machete. 137

North of Rio Patuca the fertile areas are characterized by the existence of extensive "cohune ridges," that is, places dotted with the cohune or corozo palm (*Attalea* sp.). A great number of other palms are found in this region, but only two of them are cultivated and play an important part in the food supply, the coco palm and the pejivalle. Among the other tree forms characteristic of the forest may be mentioned the following: Ceiba (*Ceiba pentandra* Gaertn.), mahogany (*Swietenia macrophylla* King), Spanish or West Indian cedar (*Cedrela* sp.), rosewood, rubber tree (*Castilla* sp.), sapodilla (*Sapota zapotilla*), lignum vitae or guayacán (*Tecoma* sp.), Santa Maria or calaba (*Calophyllum brasiliense* var.), and balsa or corkwood (*Ochroma lagopus*). Epiphytic orchids are especially numerous and rare varieties are also found. The strong withes or *bejucos* on the trees are used in basketry and as a tying material. [285]

From Rio Tinto to Rio Grande the dense forest is at times interrupted by large areas of pine ridges or savannas. These are undulating plains covered with gravel or coarse sand, overgrown with grass, myrtaceae, oaks, nances, small fan palms and long leaf or pitch pines. This pine (*Pinus tenuifolia* Benth.) has its southern limit on the Atlantic side of Nicaragua, a little north of Bluefields Bluff, in latitude 12° 5′ north. Few big trees are to be found in these savannas; there is little underbrush, epiphytes and lianas are scarce, and the whole presents a parklike appearance. On the rich alluvial soil on both sides of the streams traversing the savannas grows a dense and luxuriant vegetation resembling the real forest.

ANIMAL KINGDOM.—Zoologically the Mosquito Coast belongs to South America rather than to North America. In this sparsely inhabited region may be found a great number of species of animal life. The largest mammals are the tapir and the manatee; the latter is still an important animal of food for the Indians, but it is getting rare now. 136

In the jungle are found such beasts of prey as the jaguar, the puma or cougar, and the ocelot; a black variety of the jaguar is occasionally met with. The howling monkey, the spider monkey, and the white-faced or capuchin monkey are found on the tree tops; the two last-named ones are, together with two species of deer and two species of peccary, the most important food animals of the Indians. [224]

Three species of anteaters, many armadillos and opossums, and 2-toed and 3-toed sloths may be met with. Among the rodents may be mentioned the agouti, paca, several species of porcupine, squirrels,

1: Conzemius M-4, 5 (1921) 1932
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recent times this arm has also spread to the Sumu. The Indians use muzzle-loading shotguns, called *raks* or *rakbus* by the Miskito and *arakbus* or *arakbas* by the Sumu. These names are evidently of European origin and are taken from the English "harquebus" or the French "arquebuse," or perhaps the Spanish "arcabuz." Powder is known by its English name (*pówdar*), but shot, which is generally kept in the small *pispis* bottle gourd (*Lagenaria lagenaria*), is spoken of by the Indians as the "eggs of the shotgun" (M.: *raks mabra;* S.: *arakbus suma*). Double-barreled guns (M.: *raks sutki;* S.: *arakbus sutki*, that is, "twin guns") are also occasionally met with.

THE CHASE

SKILL IN HUNTING.—Game is very abundant in this sparsely inhabited part of Central America. The Indian is an excellent hunter; the keenness of his senses is marvelous and nothing escapes his eyes. Every sound is noticed and understood, and the distance and the direction whence any noise proceeds is estimated with surprising accuracy. The Indian has a marvelous instinct which permits him to discover with great ease the footprints of animals and then determine the species to which they belong. He pursues the game through the thicket with the sagacity of the bloodhound.

A MALE OCCUPATION.—The wife never accompanies her husband on the actual hunt, where she would be in his way, for she does not learn to handle any arms. When a number of men organize a hunting party, expected to last more than a day, they may be accompanied by the members of their family. Arrived at a place said to be rich in game, they erect temporary sheds, wherefrom they undertake smaller expeditions in different directions. The hunters start out early in the morning, and before nightfall they rejoin the women and children, who have been left behind at the provisional ranch. The best time for hunting is in the morning before 9 o'clock and in the evening after

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Camock, a member of that Puritan colony, appears to have founded a settlement at Cabo Gracias a Dios. Having gained the confidence of the Indians, the son of one of their most important chiefs was taken to England, where he remained two years, a certain Colonel Morris remaining as hostage among the Indians. Some of these Indians went occasionally to Providencia, where they learned English and were instructed in the Christian religion (Sloan, a: pp. LXXVI–LXXVII; Bridges: II, 138–139). In 1641 this Puritan colony, which by that time had found it more profitable to take up privateering than to pursue the peaceable occupation of farming, was stamped out by a Spanish expedition; the settlers then left for other regions, chiefly to the Bahama Islands.

According to Exquemelin (French edit.: II, 277), who wrote in 1678, the first buccaneers, a French vessel, anchored at Cabo Gracias a Dios 60 years previously—that is, about 1618—and entered into friendly relations with the Indians; the buccaneers would seem, therefore, to have been the first Europeans with whom the Miskito became friendly.

1: Conzemius M-4, 5 (1921) 1932
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224 4 o'clock; that is when the animals and birds are feeding. During the remainder of the day the forest is quiet, and most of the birds roost in the dense treetops.

487 224 TRAVEL TO THE HUNTING GROUND.—Travel is effected chiefly by small pitpans, for the Indians are canoe men by necessity, the rivers being their roads. They leave their boat at a certain spot, the parting point of a trail leading to a good hunting ground, that is, a region abundant in fruit trees. To a stranger such hunting trails are barely perceptible; here and there marks on trees made with the machete and broken twigs indicate the direction. The Indians always travel in single file, even when there is a broad road, or when they traverse open country. In marching they always glance at the sun and they observe the direction the clouds are moving, that is from northeast to southwest on the Mosquito Coast. Intuitively they keep in their mind a mental picture of the direction they came from. They walk along, silent and watchful, and at times stand still to listen.

224 STALKING.—The Indian is an expert stalker, but not a true sportsman; he rarely shoots at the game while it is in motion, except in the midst of a flock of flying birds. He therefore rarely misses the mark, but is not necessarily a good marksman. Owing to his scarce clothing he moves about the forest without making any noise. His color also appears to a certain degree to assimilate with the forest.

IMITATING THE CALL OF THE GAME.—The Indian huntsman imitates the call of animals and birds, in order to call them within arrow or gun shot. Bone whistles (M.: *kyaki wasbaya;* S.: *malka kuñ*) are used to lure the agouti (*Dasyprocta* sp.) under certain trees at the time when the latter drop their fruits. This trick is especially successful during the pairing season of certain animals. The Indian is thoroughly acquainted with the habits of the game.

HUNTING DOGS.—A lot of skinny, mangy dogs, esteemed for their skill in stirring up the game, are found in the Indian villages. With the aid of large dogs trained for the purpose, the jaguar is cornered and the puma is driven up a tree, where it may easily be shot by the hunter. When the Indian ascends a stream he keeps close to the river bank and lets his dog range the woods. The latter, upon scaring up some game, will give tongue immediately and endeavor to drive it to the water. This is the common way of hunting the paca which lives at the river bank and plunges into the water when pursued. This rodent also enters hollow trees and burrows in the ground and is then difficult to secure. Its meat is delicious and is appreciated by the average foreigner.

224 824 Before leaving for the chase the dog's snout is rubbed with certain herbs, so that the game shall not be able to smell it. This procedure is also supposed to clear the scent of the dog and sharpen his perceptions. An infusion from a small parasitic plant, called in Spanish

1: Conzemius M-4, 5 (1921) 1932
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"lengua de venado" (deer's tongue), is administered by the Sumu to the hunting dogs when they wish to get a deer.

HUNTING WEAPONS.—Muzzle-loading shotguns (M.: *raks*, *rakbus*; S.: *arakbus*, *arakbas*) are now used on the chase by all the Miskito, but bow and arrow (see Hunting and Fighting Implements) are still employed by the Sumu for that purpose. The arrow is not discharged at an object more than 75 feet away, but it has the advantage of not scaring the other game in the neighborhood, as does the discharge of a gun. Upon meeting a drove of peccaries, the hunters surround it, and each one of them will attempt to shoot several arrows before the scared game have found an outlet to escape. Three or four arrows are generally taken along by each man, as the wild cane shaft generally breaks during the struggle of the wounded animal; the larger game may even break the hardwood foreshaft or the iron head of the arrow.

Snares, traps, and slings are seldom used to-day. The Kukra are said to have been expert in capturing big game by making a deep hole in the neighborhood of fruit trees. It was carefully camouflaged with the aid of branches and leaves, and a small trail was cut to lead the victims to it.

DEER.—Nocturnal animals, especially the two small species of deer found in the country (*Odocoileus* sp. and *Mazama* sp.), are hunted occasionally with the aid of torches. Toward the close of the dry season the savanna is also fired and drives are organized to hunt deer or other animals, which are driven in a corner, where they are easily secured. Deer, agouti, and birds are the chief game found in the savannas and along the coast.

PECCARY.—The white-lipped peccary (*Tayassu* sp.) is highly esteemed as meat; it travels in large droves, which may be heard from some distance. Occasionally it charges the hunter and forces him up a tree; some bushmen claim, however, that all one needs to do in such circumstance is to step behind a large tree, whereupon the animals keep on rushing forward without attempting to turn. The smaller collared peccary (*Pecari angulatus*) has a dorsal gland which Europeans regarded as the navel in former days; this gland has to be cut off immediately after death, otherwise the flesh can hardly be eaten. The weight of these beasts may range from 50 to 100 pounds. The peccaries, like most of the other edible animals, are supposed to have an owner, who keeps them shut up at times, and does not release them unless the sukya practices certain rites of incantation and makes a small offering.

OTHER MAMMALS.—Among the other game animals the most esteemed are two species of monkey, the spider monkey (*Ateles* sp.) and the capuchin monkey (*Cebus* sp.). The tapir (*Tapirella bairdii* syn. *Elasmognathus bairdii*) is considered a special delicacy in certain regions of the Mosquito Coast; in other districts its flesh is said to be

1: Conzemius M-4, 5 (1921) 1932
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coarse and unhealthy and even is taboo. The Miskito call it *tilba*, which name is already mentioned at the end of the seventeenth century in the form *tilbu* (M. W.: 311).

LIZARDS.—The largest lizard is the green iguana (*Iguana tuberculata*) which is generally shot while feeding on the river banks or in the branches of some overhanging tree. Sometimes it tries to escape by dashing into the water, where the Indians attempt to catch it by diving after it. It is sometimes kept alive by the Indians until required for food. For this purpose they break the thighs and arm-bones, and put the backbone out of joint; or else they twist the legs and tie the front ones over the back and the hind ones over the tail by their own sinews. The poor animal is thus unable to run away. The eggs of the iguana are also highly esteemed.

BIRDS.—Various species of guans (*Penelope*, *Ortalis*, *Pipile* [46]), the yellow-crested black curassows (*Crax* sp.), mountain hens (*Tinamus* sp.), quails (*Ortyx* sp.), partridges (*Odontophorus* sp.), pigeons (*Columba* sp.), and wild ducks (*Cairina moschata*) are esteemed as game birds.

RETURN FROM THE CHASE.—After the chase the game is carried on the back to the canoe. When a large animal, as a peccary, has been killed each fore and hind foot are tied together with the aid of withes. The Indian, putting his arms through the loops thus formed, with the beast's head downward, carries it on the back, as if shouldering a knapsack. A strap passing over the forehead may also be attached to help support the load. If the hunters are unable to carry all the game at one time the remainder is hung on the branches of some tree, to keep it out of reach of prowling animals.

Arrived at his settlement, the Indian merely takes his arms and paddle and walks home, sending his wife down to the waterside to fetch the game. The hair of the latter is then singed by a fire made in the open. The neighbors, who are generally near relatives, receive a share of the meat.

Then a big pot is put on the fire, for the Indians do not think of the morrow and, if possible, consume all the meat at once. The women and children do not have patience enough to wait until it is cooked, but they cut off small slices, which they roast over the hot coals and eat, with a few bananas or plantains. If they are unable to dispose of all the supply on the first day the remainder is barbecued without salt over a slow fire. (See Culinary Arts.)

HUNTING CHARMS.—Many charms are used for luck in hunting. Stones or pebbles, found in the stomach of certain animals, are

[46] The large guan (*Penelope* sp.) is called *kwamu* by the Miskito, a name found already by M. W. (311) in the form *quaumoes*.

1: Conzemius M-4, 5 (1921) 1932
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supposed to attract the same species and entice it within gunshot.* The bones, teeth, and skulls of animals killed in the chase are said to have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaligui*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal weapon of both tribes under consideration. (See Hunting and Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time great festivals, called *asañ lāūwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

* There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

2: Kirchhoff E-4 (no date) 1948
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Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulua*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

AMERICAN ORIGIN:

Sweet manioc.
Bitter manioc.
Maize.
Pejivalle (pejibaye) palm.
Sweetpotato.
Eddoe (tania).
Gourd.
Pumpkin.
Squash.
Chayote.
Tomato.
Bean (red and black).
Pineapple.
Tobacco.
Cotton.
Achiote (*Bixa orellana*).
Cacao.
Pataste.
Papaya.
Avocado.
Guava.
Chirimoya.
Zapote.
Coconut.
Usi.
Ficus.
Yam.
Opuntia.
Peanuts.

FOREIGN ORIGIN:

Rice.
Sugarcane.
Coffee.
Mango.
Breadfruit.
Tamarind.
Citrus fruits.
Plantain.
Banana.

Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

Fishing.—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

3: Pijoan D-5 (ca. 1945) 1946
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MEAT FOODS

226 A very large share of food is obtained from the sea, the lagoons, and the rivers. Larger fish are caught by throwing a spear or javelin, smaller ones with hooks or nets. Previous to the introduction of steel, the Indians fashioned their spear heads from bamboo, which was easily cut into barbs. A cord is attached to the point whereas the shaft is a solid light wood. With this device they spear the carp-like snook and the tarpon. At night fish are attracted by the use of a pitch pine torch and are also speared; turtles are harpooned. Fish are sometimes caught by "poisoning" the water. For this purpose the Indians utilize several vines; usually one which has been identified as *Seriania inebrians*. The vine is crushed with flat stones to release the poisonous milky juice. A creek is temporarily dammed and at some distance above the dam the crushed plant is thrown into de water, the fish are quickly paralysed and are then caught by the Indians. Large fish are easily harpooned when in this condition. Smaller fish are allowed to float away and recover when they reach unpolluted water. Bows and arrows are rarely used today for fishing purposes but near mining centers fish are often dynamited; this process is to be condemned since it destroys the majority of the smaller fish.

[225] The tails of young alligators and crocodiles are occasionally eaten. Lobsters, crabs, and mollusks form an important item of food. In general, the rivers and lagoons afford an ever present, easily obtainable source of food.

224 With muzzle loading and other equally out-of-date shotguns, the Indians hunt game. Spears, bows, and arrows are occasionally used but the blowgun is no longer used. Game is found in abundance along the margins of the rivers. Deer, Peccary, spider monkey and capuchin monkey, tapir, lizards and a variety of birds, including parrots, red-spoonbills, curasows, mountain hens, quail, partridge, pigeons and a number of wild ducks, are used for food. In addition to the wild game, the Indians raise and eat some domestic cattle, pigs and chikens. There is no lack of meat of one form of another. It is often preserved by drying and smoking it for several days over a dull fire, since the humidity is too high for sun drying. Salt is used sparingly by the Indians.

FOOD PREPARATION AND CONSUMPTION

373 Fire is a necessity for cooking, for without it the Indians would have to subsist on raw foods. Fire is produced by twirling a hardwood stick in a notch of wild cane. When smoke appears a piece of wild

1: Conzemius M-4, 5 (1921) 1932
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and rabbits. The raccoon, the coati or pisote, the weasel, the skunk, and the kinkajou are met with in the forests and the otter exists in all the streams.

Alligators and a small species of crocodile infest the rivers, lagoons, and swamps. Several varieties of river turtles or tortoises occur, while the valued hawk's bill, the green turtle, and the loggerhead are caught in the sea. The largest lizards are the iguanas, which occur in several eatable varieties. Poisonous and harmless snakes are numerous.

Man-eating sharks and sawfishes are found in the sea and in the lower course of the streams.

The "john crow" or turkey buzzard is a useful scavenger. During the winter months many of the common North American birds arrive as immigrants and spend the cold season in this mild climate. Guans, curassows, mountain hens, wild ducks, and pigeons are esteemed as food. Trogons, orioles, toucans, tanagers, macaws, parrots, parrakeets, and humming birds make themselves conspicuous by their plumage or by their song. Flamingos, white egrets, and herons are found chiefly around the lagoons and swamps.

The mosquitoes are the propagators of malaria, while red bugs, ticks, cockroaches, jiggers, sandflies, and screw worms are largely responsible for the prevailing skin troubles.

INHABITANTS.—The humid tropical climate, combined with the jungle vegetation, have retarded settlement and the building up of a dense population. The bulk of the inhabitants of the Mosquito Coast are found along the seashore and on the lower part of the larger rivers.

Besides the *Miskito* and *Sumu*, with whom the present monograph will deal, two other Indian tribes inhabit the Mosquito Coast, the *Paya* and *Rama*. The former live in Honduras between Rio Patuca and Rio Sico. Their number is estimated at about 700 and they are dying out rapidly (vide Conzemius, b). The Rama tribe, the bulk of which lives on Rama Key in Bluefields Lagoon, numbers only about 200. Its language is of Chibcha stock and is closely allied to those spoken by the aborigines of Costa Rica, Panama, Colombia, and northern Ecuador (vide Conzemius, c). The western portion of the Mosquito Coast was formerly occupied by the *Matagalpa*, whose language has been extinct for nearly half a century; a dialect of it is still spoken to this day in the villages of Cacaopera and Lislique (Salvador). A number of other tribes have been reported from the country under consideration in former days, but as they have been extinct for some time it has been impossible to classify them. Some of the tribal designations applied by the early authors are merely derived from the rivers upon which the tribes lived.

From Rio Tinto northward along the sea and lagoons live the so-called *Black Carib* or *Garif*. These are the descendants of the

1: Conzemius M-4, 5 (1921) 1932
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MANATEE SPEARING.—A similar spear, but with a point having not more than 2 inches in length and provided with only one or two barbs, is used to catch the manatee or sea cow (*Trichechus* sp.). The staff and float are identical as in the fish spear, but the line is thicker and stronger, for the manatee is a large and powerful animal. Dampier (I, 35–36) gives an account of the method practiced by the Miskito to secure this large mammal; it is still done so in our days. The Indians go after the manatee during the early morning when it grazes on the banks of the rivers and lagoons. The canoe is sometimes covered with branches or bushes, giving the appearance of a floating tree or island. When speared, the manatee makes off at a great speed, followed by the Indians, who can ascertain the direction which it takes from the float rippling the surface of the water. They manage to seize the latter and tie the distal end of the line to the bow of the boat. Gradually they advance toward the animal, hauling in the cord as they proceed. But the victim, seeing or hearing the craft, makes away a second time, dragging behind it the canoe with the Indians, at no little risk to the latter. Sometimes a second harpoon is driven into it. Finally the manatee is totally exhausted; the Indians then approach and kill it with their machetes or with sticks and then haul it into their small craft. As the manatee may weigh from 500 to 600 pounds, this is no easy matter. Both Indians get in the water and, holding onto the sides of their boat, they tilt it over so as to swamp it, whereupon they push it under their prize. Then the water is quickly bailed out of the canoe with the aid of a large calabash and the craft gradually rises. When all the water has been bailed out both men get in again and triumphantly paddle home.

TURTLE SPEARING.—The harpoon (*silak*) used for spearing turtle is not provided with a float, but it has a cord measuring up to 30 fathoms in length, the distal end of which is attached to the bow of the boat. The shaft or staff is of pejivalle wood, or of some wild species of palm, known by the Miskito names *apo* and *rdûwa;* the cord is tied firmly to it, for it does not float. This staff is from 2 to 3 inches thick and tapers gradually to a point at the rear end. An iron or steel point is inserted in the other extremity and an iron band is fitted around, in order to prevent the wood from splitting upon striking the turtle, for the harpoon is thown with great force. The point or head, locally called "peg" (*silak*), is triangular in section; it is single barbed at each one of the three lateral edges. Its length is only from 1½ to 2 inches, which fact enables it to get a good hold on the hard carapace of the turtle and at the same time not enter far enough to kill it. The Indians endeavor to approach either behind or directly in front of the turtle, as it does not see well straight ahead. When it comes to the surface to breathe, which takes place at intervals of about 20 minutes, the spear is thrown into the air in such a

1: Conzemius M-4, 5 (1921) 1932
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●225 manner as to fall vertically onto and thus pierce the tough shell of the turtle. If thrown obliquely it would glance off the smooth carapace. Upon being struck the turtle disappears in the water, dragging the long line with the boat along, but after a while it becomes exhausted by its struggle. The boat is swamped and placed under the turtle to haul it in, for the latter may weigh up to several hundred pounds. By shoving the canoe from one side to the other the Indians throw out enough water to allow it to float, while the remainder is bailed out with a calabash. After the extraction of the harpoon head, the wound is stopped with cloth; otherwise the turtle may die. These animals are also harpooned at night, their presence being indicated by the line of phosphorescent light they produce in the water. A smaller implement is employed for young sea turtles and for the different smaller varieties met with in the rivers.

TURTLE NETS.—The Miskito of Tasbapauni (Pearl Lagoon) also employ large turtle nets, from 50 to 100 fathoms in length and from 6 to 8 feet in width, made of imported twine. These nets have been introduced into the country by the fishermen from the Cayman Islands and the Bay Islands. These turtle nets have very large meshes; they are anchored at the bottom and floated with buoys placed along the margin. Wooden turtle decoys are also attached to them in order to attract the prize, which becomes entangled therein and is then easily caught. Sometimes turtles die in the nets, being unable to rise to the surface to breathe.

OTHER METHODS OF CATCHING TURTLES.—Sea turtles are also caught at night by the Indians, when they come to the shore to dig a hole in the sand to deposit their eggs therein. They then carefully cover up the hole again, and occasionally even deposit some leaves or driftwood on the spot, so as to prevent detection. The Indians are very clever in discovering the eggs, being guided by indications on the surface sand. They poke suspected places with pointed sticks and by the moist particles adhering to the latter they immediately perceive when an egg has been pierced. Upon withdrawing the stick they examine and smell it, and having come to a satisfactory conclusion they turn up the sand. The Indian will also run after the turtle, overhaul it, and turn it on its back so as to render it helpless.

The green sea turtle (M.: *wli*, *lih*; S.: *wili*) is considered a great delicacy while the loggerhead and the hawk's-bill are also eaten. The latter species furnishes the valuable shell. Turtles are penned in [417] stockades or "crawls,"[45] made by driving heavy mangrove posts in the shallow sea water, until needed for food.

Several species of tortoises, of which the largest is the bocatora (M.: *kuswa*[46]; S.: *kowa*, *kuwa*) are also greatly esteemed as food.

[45] From the Spanish corral, "cattle pen."

[46] M. W. (312) gives this name in the form cushwaw.

1: Conzemius M-4, 5 (1921) 1932
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They are caught with the hook or by diving after them; some Indians will also catch the sea turtles in this manner and bring them up in their hands, but this feat is attended with danger, from bites and sharp coral. The bocatora tortoise is speckled black and yellow and is found in the larger rivers only. It lays about 20 round eggs in the sand, silt, or even in stiff earth; the eggs are inclosed in a rough calcareous parchment and are considered a great delicacy.

LANCES.—Two varieties of long spears, with fixed points, are employed for striking fish. They are not thrown, but kept in the hand while striking. These implements are found chiefly among the river Indians, Miskito as well as Sumu. The thin, strong staff, which may be from 10 to 15 feet in length, is made from the stem of a tree called by the Ladinos "cacao" (M.: *sakalpihni;* S.: *babasnak*). Of these two implements the more common one (M.: *sihnak;* S.: *suksuk*) has a harpoonlike point, similar to that of the javelin or throwing spear. The other one (M. and S.: *daka*) is provided with a pointed piece of thick wire or some other metal, which looks like a nail; for that reason it is called "clavo" by the Ladinos, who also use it in fishing.

FISHHOOKS.—Fishing with the hook (M.: *kyul;* T., P.: *kuyul;* U.: *simin*) is done chiefly by the women, children, and old men. The line is made of silk-grass fiber (*Bromelia* sp.) and is dyed black with vegetable juices, so as to render it less conspicuous. The hooks are of foreign manufacture but in former days crooked bones were used for the purpose. The Indians bait them with worms, spiders, grasshoppers, or fruits (guavas, wild figs).

At certain times of the year when the fruits of the wild fig or of other trees growing along the edge of the river begin to drop, the Indians fish without any bait at all. They flick and cast their long line about, lashing the surface of the water, and letting it sink, presently raising it with a peculiar movement of the wrist. This noise is regarded by the fish as resulting from the dropping of overhanging fruits and they will greedily snap after them and then be caught by the hook.

FISHING NETS.—A small fishing net (M.: *ilis, tan;* T.: *wilino;* P.: *dua;* U.: *yano*), made of silk-grass fiber, is used by both Miskito and Sumu. With its aid they close the mouth of narrow creeks, in order to catch the fish trying to enter the main river. Wickham (b: 238; c: 203) already mentions the use of drag nets among the Ulwa of Rio Escondido; the Indians employed it in low water in the pools scattered among the bowlders or rocks in the rapids and falls.

The cast net and the seine have also been introduced recently among the Miskito. The former especially is becoming popular. Having the folded net in his hand, the Indian throws it like a lasso upon the water in such a manner that by a single cast it becomes suspended almost to its whole width, surprising and catching the

1: Conzemius M-4, 5 (1921) 1932
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226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with
● 225 the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

172 A small bivalve mollusk, known locally as "cockle" (M. and S.: *ähi*), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjøkkenmødding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 FISHING CHARMS.—Certain charms are said to be very efficacious
777 at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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MEAT FOODS

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1: Conzemius M-4, 5 (1921) 1932
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(*Ananas sativus;* M.: *pihto;* S.: *masa, masahti*),[a] papaws or papayas (*Carica papaya* L.; M.: *twas, tawas;* S.: *ulmak, ulumak*), avocados or alligator pears (*Persea gratissima* Gaertn.; M.: *sikya;* S.: *sikya, sariñ*), soursops (*Anona muricata* L.; M.: *dwarsap;* S.: *sapot*), guavas (*Psidium guajava* L.; M.: *sikra;* S.: *burimak*), cashews (*Anacardium occidentale* L.; M. and S.: *kasau*), and watermelons (*Citrullus vulgaris* Schrad.; M. and S.: *rayapisa*). Spanish plums (*Spondias purpurea* L.), although apparently indigenous, are rarely found, and their Indian name *ploms* comes from the English language.

The most important fruit trees of foreign origin are: Citrus fruits (oranges, lemons, sweet limes, sour limes, shaddocks, grapefruits, citrons), mangoes (*Mangifera indica* L.), breadfruits (*Artocarpus communis* syn. *incisa*), tamarinds (*Tamarindus indica* L.), and rose apples (*Eugenia jambos* L.).

GARDENS.—Around their houses many Indians cultivate also a few fruit trees and other plants. The calabash tree (*Crescentia cujete* L.; M.: *kahmi;* S.: *sutak*) is very common in these gardens; it is esteemed for the very useful kitchen receptacles obtained from its fruit. A few bushes of cotton (*Gossypium peruvianum* Cav.; M.: *wahmuk;* S.: *wahmak*), chile peppers (*Capsicum* sp.; M.: *kuma;* S.: *asmak, aÑmak*) and annatto (*Bixa orellana* L.; M.: *aulala, tmariñ;* S.: *awal*) are found near every lodge. A number of flowers are also cultivated, as the African marigolds, purple and white four-o'clocks, and the crimson hibiscus.

FISHING AND FISHING IMPLEMENTS

A very large share of the food supply of these primitive Indians is obtained from the sea, the lagoons, and the rivers. Fishing is therefore an occupation wherein both tribes have attained an unusual degree of skill. The main implements used for this purpose are harpoons, fishhooks, nets, and bows and arrows.

JAVELIN.—The javelin or throwing spear (M.: *wfisku;* S.: *sukruk*) is used in the sea, lagoons, and larger rivers. It consists of a wooden staff, from 8 to 9 feet in length, in the front end of which a sharp barbed steel head has been inserted. The staff is of strong, slender, light wood, generally of a tree called "magaleta" (M.: *sihnak, sinak;* S.: *sina*); the Ulwa, however, use for this purpose the wood of a tree called by them *pan-kuba*, which is said to be superior to the above-mentioned species. The loosely fitting steel point is from 4 to 5 inches long and is made of an old file, wherein several series of double

[a] The old authors, Exquemelin (Engl. edit.: 251), Dampier (I, 9), and M. W. (308, 310), met this fruit among the Miskito during the latter part of the seventeenth century; in those days it was also cultivated by the aborigines of the Corn Islands (Exquemelin, Engl. edit.: 114).

1: Conzemius M-4, 5 (1921) 1932
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441 barbs have been made with the aid of another file. Previous to the introduction of iron and steel the Indians made their spear points of pointed and barbed pieces of bamboo. A cord about 50 feet in length is attached to the point, while the other end of it is wound round a long reel of light wood, which acts as a "bob" or float, and is stuck at the distal end of the staff. These Indians call the float *kunkun*, which name is also applied by the Sumu to the balsa tree (*Ochroma lagopus* Sw.), from which it is usually made. Sometimes the red cedar (*Cedrela* sp.) or the roots of the "bobwood" tree (*Anona palustris*) are employed for this purpose by the Miskito.

The javelin is used only for the larger fishes, such as the carplike snook (M. and S.: *mopi*) and the salmonlike tarpon (M. and S.: *tapam, tahpam*) which are frequently met with in the larger rivers.

226 Two men generally work together when fishing with this implement. The one in the bow of the boat signals his companion how to steer by motioning with the hand. They glide noiselessly over the water, and when within reach of a fish, that is, about 60 feet distant from it, the bowman stands up with the spear in his right hand and aims and throws at a single fish, which he may be unable to see through the thickness of water. The only thing visible is the fish's "wake," that is, the ripple produced on the surface of the water as he swims lazily along. By that the Indian guesses the species of the fish as well as the depth at which he swims under water. It may be 2 feet. The spear is thrown in such a manner that it strikes the water almost vertically; the Indians seldom miss, for they have practiced this sport from early childhood. Upon striking the fish, the cord unwinds; harpoon and reel become detached from the staff, but they are attached to each other by the cord. The reel acts like a float and points out the whereabouts of the prize; with its aid the latter is secured. When the fish is tired, it is drawn near the canoe, killed with a stick, and hauled in. Then the staff, which is also of floatable wood, is likewise caught.

At the beginning of the rainy season the Miskito also practice this sport at night, especially in the lagoons. At such places where the fresh water comes in contact with the sea water it blazes as the fish swims along, thus indicating the latter's presence.

On dark nights the fish is also speared with the aid of a pitch-pine torch which is held by a third man in the boat. The glare of the torch attracts the fish and enables the bowman to spy his prey, which is immediately transfixed by the harpoon. This sport of fishing with a torch is practiced chiefly in November and December.

[71] The Sumu seldom employ this fishing implement as it is of little use in the small rocky streams where the bulk of this tribe lives. On the other hand, many Creoles and Ladinos living on the coast have learned from the Indians how to handle it.

1: Conzemius M-4, 5 (1921) 1932
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They are caught with the hook or by diving after them; some Indians will also catch the sea turtles in this manner and bring them up in their hands, but this feat is attended with danger, from bites and sharp coral. The bocatora tortoise is speckled black and yellow and is found in the larger rivers only. It lays about 20 round eggs in the sand, silt, or even in stiff earth; the eggs are inclosed in a rough calcareous parchment and are considered a great delicacy.

LANCES.—Two varieties of long spears, with fixed points, are employed for striking fish. They are not thrown, but kept in the hand while striking. These implements are found chiefly among the river Indians, Miskito as well as Sumu. The thin, strong staff, which may be from 10 to 15 feet in length, is made from the stem of a tree called by the Ladinos "cacao" (M.: *sakalpihni;* S.: *babasnak*). Of these two implements the more common one (M.: *sihnak;* S.: *suksuk*) has a harpoonlike point, similar to that of the javelin or throwing spear. The other one (M. and S.: *daka*) is provided with a pointed piece of thick wire or some other metal, which looks like a nail; for that reason it is called "clavo" by the Ladinos, who also use it in fishing.

FISHHOOKS.—Fishing with the hook (M.: *kyul;* T., P.: *kuyul;* U.: *simin*) is done chiefly by the women, children, and old men. The line is made of silk-grass fiber (*Bromelia* sp.) and is dyed black with vegetable juices, so as to render it less conspicuous. The hooks are of foreign manufacture but in former days crooked bones were used for the purpose. The Indians bait them with worms, spiders, grasshoppers, or fruits (guavas, wild figs).

At certain times of the year when the fruits of the wild fig or of other trees growing along the edge of the river begin to drop, the Indians fish without any bait at all. They flick and cast their long line about, lashing the surface of the water, and letting it sink, presently raising it with a peculiar movement of the wrist. This noise is regarded by the fish as resulting from the dropping of overhanging fruits and they will greedily snap after them and then be caught by the hook.

FISHING NETS.—A small fishing net (M.: *ilis, tan;* T.: *wilino;* P.: *dua;* U.: *yano*), made of silk-grass fiber, is used by both Miskito and Sumu. With its aid they close the mouth of narrow creeks, in order to catch the fish trying to enter the main river. Wickham (b: 238; c: 203) already mentions the use of drag nets among the Ulwa of Rio Escondido; the Indians employed it in low water in the pools scattered among the bowlders or rocks in the rapids and falls.

The cast net and the seine have also been introduced recently among the Miskito. The former especially is becoming popular. Having the folded net in his hand, the Indian throws it like a lasso upon the water in such a manner that by a single cast it becomes suspended almost to its whole width, surprising and catching the

1: Conzemius M-4, 5 (1921) 1932
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227 fish on that spot; the presence of the latter is indicated to him from certain movements on the surface of the water. Lead balls or small round pebbles are attached to the edges of the net in order to keep it down in the water.

● 226 BOW AND ARROW.—Several river fishes, especially the short, deep, bluish-purple, perchlike species, which is known locally by the Miskito name *tuba* (S.: *pahwa*, *pahawa*, *pāū*), are generally killed with bow and arrow. (See Hunting and Fighting Implements.) Two allied fishes, the moga (M. and S.: *moba*) and the guapote (M.: *sahsiñ;* S.: *musa*), are also killed in this manner.

The fishermen will sit entire hours at the waterside, keeping up continually a low, plaintive whistling, which is said to entice the fish within arrow shot. This requires great patience, a quality of which the Indian is not lacking, especially when it comes to hunting and fishing. The point of the arrow is held sometimes a foot deep in the water. At the approach of a fish the arrow goes off quick as lightning, and it rarely misses the mark. On account of its feather-light shaft it returns again to the surface and the fish is easily seized. This exercise is extremely difficult, as the true position of the fish is not the one in which it appears to sight, but it varies with the distance of the fish, with the latter's depth in the water, and upon the reflection of the light. In case the fisherman misses the arrow will return to the surface with the same degree as it had been shot down.

[278] FISH "POISONING."—Fish are also caught by "poisoning" the water of small creeks. For this purpose the Indians utilize several vines, especially *Seriania inebrians* (M.: *basala;* T., P.,: *wana;* U.: *wahnari*); in Central America all of these varieties are known by the Quichua name "barbasco" or the Aztec "amol" (amolli). The vine is crushed with flat stones or wooden clubs, in order to release the poisonous milky juice. At a narrow part the creek has been barred by a sort of weir or fence made of sticks, stones, or branches in the form of an angle with the point in the middle of the stream. At some distance above this spot the crushed plant is thrown in the water, and the poisonous juice will spread and stupefy all the fish in the neighborhood. The latter then float on the surface and are carried down the stream, but they are intercepted by the weir, where they are caught by the Indians standing in the water and thrown on land. Larger fishes, which are not entirely powerless, are easily harpooned in this condition. By this method enormous quantities of fish may be obtained in a short time. The smaller fishes are allowed to float away and recover in the unadulterated water below. The juice of the "barbasco" is also poisonous to man, but it does not affect the taste of fish killed or stupefied with it. This manner of fishing is widespread in both Americas.

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DYNAMITING FISH.—Fish are also caught by exploding dynamite in the deeper holes and eddies of the rivers. This is practiced chiefly by the Indians living around the mining districts, where they can easily obtain sticks of dynamite. Several severe accidents have resulted among the Indians by this manner of fishing.

FISH POTS.—Fish pots (*pispat*) of cylindrical shape are also made by the Indians nowadays of split bamboo. They are of recent introduction and there is no native name for them. At one extremity this implement has a funnel-shaped opening. The apex of the funnel points toward the center of the trap, so that the fish can easily enter it, but is unable to get out again.

OTHER METHODS OF FISHING.—A very peculiar method of fishing is sometimes employed in order to catch certain species which have the habit of leaping out of the water when they believe themselves persecuted by other fishes. The Indians paddle slowly along the bank of the river, rocking the boat as violently as they can, at the same time making much noise by beating the bank with their paddles. The fish, leaping in terror out of the water, will fall in the canoe, and are killed immediately, so as to prevent them from escaping by another leap. This method was observed by Ferdinand Columbus in 1502 on the Atlantic coast of Panama; the natives used to catch in that way a small fish described as "pilchard." The canoe was provided with a screen erected longitudinally from bow to stern. The terrorized fish, upon leaping out of the water, struck against the screen and fell into the bottom of the canoe.

It happens not infrequently that, while rowing over shoals of fish after the breeding season, the stroke of the paddles may cause the fish to jump out of the water and land in the canoe. The common mullet, an excellent food fish, resembling the herring, which is found in large shoals in the lagoons and larger rivers, is easily caught during still, dark nights, by paddling noiselessly along and then suddenly striking the side of the boat violently with the paddle. A gigantic species of mullet, called *kukkale* by the Indians, likewise has the habit of jumping out of the water on hearing any sudden noise. This fish does not take the bait and readily jumps out of a net.

During the dry season fish are easily caught in the old river beds or lagoons, which may be found all along the larger rivers, for all these streams are changing their course constantly. During the rainy season the water from the main river flows in these lagoons, but in summer the reverse is the case. These old river beds are then the favorite fishing grounds of women and children. They dam up a shallow portion thereof and then bail out the water in order to seize the fishes caught therein. Should a cold rain occur during low water the temperature of these water sheets will be reduced considerably, relatively speaking, and many fishes die from exposure to the cold.

1: Conzemius M-4, 5 (1921) 1932
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226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] 225 CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

172 A small bivalve mollusk, known locally as "cockle" (M. and S.: *ãhi*), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjøkkenmødding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 777 FISHING CHARMS.—Certain charms are said to be very efficacious at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

1: Conzemius M-4, 5 (1921) 1932
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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *trisu*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

2: Kirchhoff E-4 (no date) 1948
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241 Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulva*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

411 **Hunting.**—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

241 LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

262 AMERICAN ORIGIN:

Sweet manioc.
Bitter manioc.
Maize.
Pejivalle (pejibaye) palm.
Sweetpotato.
Eddoe (tania).
Gourd.
Pumpkin.
Squash.
Chayote.
Tomato.
Bean (red and black).
Pineapple.
Tobacco.
Cotton.
Achiote (*Bixa orellana*).
Cacao.
Pataste.
Papaya.
Avocado.
Guava.
Chirimoya.
Zapote.
Coconut.
Usi.
Ficus.
Yam.
Opuntia.
Peanuts.

FOREIGN ORIGIN:

Rice.
Sugarcane.
Coffee.
Mango.
Breadfruit.
Tamarind.
Citrus fruits.
Plantain.
Banana.

224 Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

226 **Fishing.**—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

[847 278]

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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MEAT FOODS

226 A very large share of food is obtained from the sea, the lagoons, and the rivers. Larger fish are caught by throwing a spear or javelin, smaller ones with hooks or nets. Previous to the introduction of steel, the Indians fashioned their spear heads from bamboo, which was easily cut into barbs. A cord is attached to the point whereas the shaft is a solid light wood. With this device they spear the carp-like snook and the tarpon. At night fish are attracted by the use of a pitch pine torch and are also speared; turtles are harpooned. Fish are sometimes caught by "poisoning" the water. For this purpose the Indians utilize several vines; usually one which has been identified as *Seriania inebrians*. The vine is crushed with flat stones to release the poisonous milky juice. A creek is temporarily dammed and at some distance above the dam the crushed plant is thrown into de water, the fish are quickly paralyzed and are then caught by the Indians. Large fish are easily harpooned when in this condition. Smaller fish are allowed to float away and recover when they reach unpolluted water. Bows and arrows are rarely used today for fishing purposes but near mining centers fish are often dynamited; this process is to be condemned since it destroys the majority of the smaller fish.

[225] The tails of young alligators and crocodiles are occasionally eaten. Lobsters, crabs, and mollusks form an important item of food. In general, the rivers and lagoons afford an ever present, easily obtainable source of food.

224 With muzzle loading and other equally out-of-date shotguns, the Indians hunt game. Spears, bows, and arrows are occasionally used but the blowgun is no longer used. Game is found in abundance along the margins of the rivers. Deer, Peccary, spider monkey and capuchin monkey, tapir, lizards and a variety of birds, including parrots, red-spoonbills, curasows, mountain hens, quail, partridge, pigeons and a number of wild ducks, are used for food. In addition to the wild game, the Indians raise and eat some domestic cattle, pigs and chikens. There is no lack of meat of one form of another. It is often preserved by drying and smoking it for several days over a dull fire, since the humidity is too high for sun drying. Salt is used sparingly by the Indians.

FOOD PREPARATION AND CONSUMPTION

373 Fire is a necessity for cooking, for without it the Indians would have to subsist on raw foods. Fire is produced by twirling a hardwood stick in a notch of wild cane. When smoke appears a piece of wild

1: Conzemius M-4, 5 (1921) 1932
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They are caught with the hook or by diving after them; some Indians will also catch the sea turtles in this manner and bring them up in their hands, but this feat is attended with danger, from bites and sharp coral. The bocatora tortoise is speckled black and yellow and is found in the larger rivers only. It lays about 20 round eggs in the sand, silt, or even in stiff earth; the eggs are inclosed in a rough calcareous parchment and are considered a great delicacy.

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cotton, but this manner of facilitating navigation may have been of European introduction. To-day the Indians make sails from canvas or other imported cloth, and employ them on the sea, lagoons, and the larger rivers.

RAFTS.—In descending the rivers the Indians also make use of rafts (M.: *puhlak;* T., P.: *pala, dana;* U.: *lim*). They are made by tying a number of balsa stems or other light wood together with the aid of lianas or vegetable fibers. For lack of other light woods at hand, banana stems are sometimes used for this purpose, but these soon become water-logged. The stems are generally half submerged, but on large balsa rafts the natives descend from the interior with heavy cargoes of merchandise or livestock.

SKILL AND ENDURANCE OF THE INDIAN BOATMEN.—Both Miskito and Sumu are remarkable for their skill and endurance as boatmen. They work in a rhythm, and at each thrust all the paddles lightly strike the gunwale of the canoe together. From time to time, at a sign of the bowman, all the paddles are lashed simultaneously with the flat part of the blade upon the surface of the water.

The river Indians of the interior are very skillful in the management of the canoes through the falls and rapids of the streams. When proceeding upstream the boat is generally hauled through a side channel, or overland with the aid of strong withes or lianas [39] which are fastened to the hole in the bow. But a greater danger consists in "shooting" the rapids, the canoe rushing with great speed down the crooked channel oversown with projecting rocks. One Indian stands in the bow with a pole balanced in the middle, with which he touches the rocks scattered in the river, in order to guide the dashing pitpan and ward it off from these dangers. Every one is silent and watchful except for the short, sharp words of direction from the bowman to the captain, who is at the stern and assists with the timely stroke of the paddle. If the canoe gets swamped, the Indians jump overboard and, hanging on to it with one hand, they bail out the water with the aid of a calabash.

DOMESTICATION OF ANIMALS AND BIRDS

INDIGENOUS ANIMALS.—Many indigenous animals are tamed to keep as pets. Of these the most frequently seen are the capuchin or white-faced monkey (*Cebus* sp.), the spider monkey (*Ateles* sp.), the howling monkey (*Alouatta* sp., syn. *Mycetes* sp.), paca (*Cuniculus*

[39] Many trees are covered with such parasitic vines or lianas which climb up the stem to the branches, from which they hang freely down like ropes in sizes from very thin ones to others measuring up to 2 and even 3 inches in diameter. They are stronger than string or rope and resist the influence of the climate much better.

1: Conzemius M-4, 5 (1921) 1932
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sp.), agouti (*Dasyprocta* sp.), deer (*Odocoileus* sp. and *Mazama* sp.), squash or coati (*Nasua narica*), and raccoon (*Procyon lotor*).

Wickham (b: 163; c: 200) even saw a tame otter among the Ulwa of Rio Escondido. The Indian women have great patience in taming young animals and they will suckle them as they would their own children. These animals are generally caught while still very young.

INDIGENOUS BIRDS.—The domestic turkey is now found in almost every hut. Among the other native birds which are usually tamed by the Indians are the following: curassow (*Crax* sp.), guan (*Penelope* sp.), mountain hen (*Tinamus* sp.), muscovy duck (*Cairina moschata*), macaw (*Ara* sp.), parrot (*Chrysotis* sp.), parrakeet (*Conurus* sp.), toucan (*Ramphastos* sp. and *Pteroglossus* sp.).

The birds are taken out of the nest while still young, but old birds are occasionally tamed. When slightly wounded or when shot with a blunt arrow they are carried home and kept for a few days without any food. After that they become generally very docile and are ready to eat the food given to them.

NATIVE BEES.—Various species of the native stingless bees are occasionally found in a semidomesticated state around the Indian huts. About a dozen species are found in the country, all belonging to the family of the Meliponidae. The largest of them is about the size of the European bee. The honey cells are circular and the honey is yellow and slightly acidulous in taste; it does not crystallize when kept for some time, as is the case with that of the European bee. It is slightly laxative and is generally diluted with water, either fresh or after having been allowed to ferment. Previous to the introduction of sugar-cane, honey was used to sweeten food. The wax, which is light brown in color, is used as "cement" in the making of arrows, spears, and other implements; in certain regions it is also used for lighting purposes. The Indians also collect the honey from the bee nests in the forests and store it in large bamboo joints.

DOMESTIC ANIMALS OF FOREIGN ORIGIN.—The most common domestic animals are the dog, pig, cattle, and fowl, while the horse, cat, goat, and sheep are rarely seen. All these animals are of foreign origin and have been introduced from the interior of Honduras and Nicaragua. Among the Indians they are known almost invariably by their Spanish or English name.[40] When the Indian family travels all the livestock is taken along.

CATTLE.—Cows (M.: *bip*, from the English "beef"; S.: *toro*, from the Spanish *toro* "bull") are owned by many Indians, especially those living in the savannas. They feed on the coarse grass, there being no artificial pastures made by the Indians. The cows are rarely

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AGRICULTURE

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The ax, machete, and "barreta" or pointed digging stick are the only agricultural implements. The great heat and moisture with the comparatively uniform temperature all the year round enable a constant succession of vegetation, and trees may bear fruit at all seasons. The soil is in general very fertile, but large areas of the country are covered with savannas with sandy and gravelly soil, which is entirely unfit for cultivation and produces only scanty grass, pines, oaks, and various species of scrubby plants. The Indians from this part of the country are therefore compelled to make their planta-

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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kaswe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78]

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kati ñi-skura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu ñi-skura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers.

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sdiks*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless.

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontín" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast.

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects.

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1920, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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February	*Cuswa cati, islu cati:* tortoise time, iswilly lizard time. Few citrus fruits, coconuts or vegetables.
March	*Cacamuk cati:* iguana season. Few green vegetables or fruits.
April	*Willi wantca cati:* male turtle time. Coconuts, very few vegetables, few bananas.
May	*Willi Mayrhen cati:* female turtle time. More bananas, plantains and coconuts.
June	*Li cati:* rain month. Same as May.
July	*Pastara cati:* high wind time. Same as May, a few more greens, bananas.
August	*Sicla cati; wis cati:* ? Few citrus fruits, more greens, bananas.
September	*Wis cati:* wis month.
October	*Sauht cati, prarhi cati:* south wind month, hurricane time. Food consumption depends to a great extent on the weather. Wild fruits, citrus fruits.
November	*Yahlbra cati:* north wind time. Citrus fruits, wild fruits.
December	*Krismas cati:* Christmas month. Fewer vegetables and fruits consumed.

During May, June and July no greens of any kind are available; this is true also during late December and January. Meat consumption remains fairly constant.

Average meat intake per day (June)	960 grams.
Other fruits and foods (June)	400 grams.

The above was the approximate daily consumption of my head boatman, Ramón. Others ate a little more or a little less, but the proportion was about the same. Apparently, members of most families consume about the equal amounts of meats and vegetables as he did. On the other hand, following a hunt, the meat consumption increases significantly and sometimes an entire animal is eaten at one sitting. Be it noted that meat is usually secured from hunting or fishing. This is somewhat striking when one observes the large numbers of turkeys among the families. It is assumed that as such these birds would be eaten frequently but instead they are consumed rarely; they are household pets. To some extent this is true of chickens. Pigs, on the other and, are more frequently eaten; they require little care and in general forage for themselves. Cowmeat, steermeat, heifer meat, etc., is obtained from the occasional slaughter of domestic cattle. The latter are plentiful.

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1: Conzemius M-4, 5 (1921) 1932
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ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasañka*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

NOSE AND LIP ORNAMENTS.—The nasal septum was formerly perforated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

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tions on the edge of the rivers, often at a considerable distance from their villages.

INFLUENCE OF CULTIVATION UPON THE FOREST.—The bush, which springs up again from the seeds of the forest trees germinating in the ground, is cut down from time to time. After two or three crops have been obtained from the plantation, a variety of weedy-looking shrubs and grass begins to get a hold upon the land. The plantation is then abandoned, as the Indian does not consider it worth while to undertake the great amount of labor needed to keep the ground clear. He prefers to prepare a new plantation (M.: *insla disañ;* S.: *yamak wisam*) by cutting down another patch of the virgin forest, where he is sure of a better crop.

The brushwood springing up in the abandoned plantation (M.: *insla prata;* S.: *yamak ba*), being not interfered with any longer, gradually chokes off the grass and weeds. As a number of the larger hardwood trees had been left standing in the first place, such an abandoned plantation will, after 15 or 20 years, not differ essentially from the surrounding primeval forest. It may then be cut again for the making of a new plantation. As the country is sparsely inhabited, the Indians will always find virgin forest within close distance from their home; besides, many of them are seminomadic and change their village sites from time to time. Were they to make their plantations for a long-continued period on the same spot, cutting down the brushwood again and again, a great change would gradually take place. The soil not containing any more seeds of forest trees, grass and a scrubby vegetation would in time spring up. This may be observed around certain villages, where by this manner the forest has been beaten back, inch by inch, gradually but surely.

BANANAS AND PLANTAINS.—It is noteworthy that the most important food plant of the Sumu and of the Miskito living toward the interior, the banana (M.: *siksa;* S.: *wakisa, pasa, iñkini*), is not indigenous to America. It was apparently brought by the Spaniards from the Canary Islands during the early part of the discovery, first to Santo Domingo (Haiti), and from there to the mainland. According to the testimony of the buccaneers of the latter part of the seventeenth century, bananas and plantains were already cultivated in those days by the Miskito of Cabo Gracias a Dios. Raveneau de Lussan (429) saw in 1688 many bananas on the banks of Rio Coco, and states that they had been planted by the Albaotins (= Sumu) and by the river currents. He also found this plant cultivated by the Mulattoes living around Cabo Gracias a Dios (438). Dampier (I, 9–10) mentions plantains among the Miskito, but he does not say anything about bananas. Exquemelin (English edit.: 114, 251), on the other hand, who visited the coast in 1671 and 1672, saw bananas, plantains, and

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15
Garif SA12

THE CARIBBEAN LOWLAND TRIBES: THE MOSQUITO, SUMO, PAYA, AND JICAQUE

By PAUL KIRCHHOFF

INTRODUCTION

M
101 The modern *Paya* and *Jicaque* enclaves in the Caribbean Lowlands may
171 not all be the descendants of the people so named by the first explorers
177 (maps 2 and 5). It is possible that the culture of the people first discovered on the coast was similar to that from which the present-day *Mosquito* and *Sumo* culture has evolved, although the north coast probably had culture traits that differed significantly from those of the *Mosquito* and *Sumo*. It is impossible to describe the post-Conquest changes of the culture of the *Paya* and *Jicaque*. It seems reasonably certain, however, that during the past 400 years the east coast people and the people now known as the *Paya* and *Jicaque* have converged culturally. We can, then, describe these peoples as a unit, although hypothetically their cultures have developed out of the ruins of a more complex aboriginal
G background.
177 Less important but significant features of the culture may be ascribed
175 to the contact with the *Black Carib* Indians, who were brought to the Bay Islands in 1796 and whose descendants have settled on the mainland. The importance of the early Negro influence has already been noted.

CULTURE

SUBSISTENCE ACTIVITIES

M
241 **Farming.**—A type of slash-and-burn agriculture is employed by all tribes. Every season the men clear new farmlands and burn the slash. Planting and cultivating is done with a digging stick. This is woman's work, except among the *Jicaque* (Von Hagen, 1943), and the women also harvest the crops. Some fields have combinations of crops, such as maize, beans, and peanuts; others are reserved for single crops, especially the tubers.

G A list of agricultural products may be found below. Sweet manioc,
[241 an important *Mosquito* crop, is grown by all tribes. Bitter manioc, prob-
177] ably introduced by the *Carib*, is important to some *Paya* and *Jicaque*.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

241 Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulua*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used principally for birds. For the blowgun, see page 224.

LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

AMERICAN ORIGIN:
- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Edible (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Beans (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Potato.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Usi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

FOREIGN ORIGIN:
- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

224 Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

226 **Fishing.**—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

cattle and other goods for objects of cheap manufacture. Yet these objects may be of real intrinsic value to the Indians and under such circumstances it is difficult to judge with fairness. However, in the larger settlements Indians have learned the true cost of materials and considerable agitation occurs in trading. Payment for services performed in isolated communities can be accomplished by the use of such commodities as salt and tobacco. In fact, many will prefer these to actual money: in the more remote areas money per se is meaningless and payment is performed with gifts.

These days there is an ever increasing want of objects from the outside world. The items most desired are salt, machetes, axes, knives, adzes, hoes, iron cooking pots, stoves, fish hooks, files, shotguns, ammunition, cotton goods, ribbons, blue dungarees, looking glasses, combs and tobacco. Cereal grains and flour are also desired.

The enterprise of the Indian today is centered mainly around the creation of useful objects. Such objects, therefore, are often used for exchange purposes. Stone work is limited to the manufacture of crude metates or maize grinders (walpa-akbaya) which are used for grinding maize. In the northern part of the Miskito coast a coarse brownish cloth is pounded from the inner bark of a tree closely resembling the rubber trees (*Castilla* sp.). The cloth as well as the tree is referred to as *tunu* or *tikam*. The bark cloth is made into sheets or blankets for bed use or into loin cloths (*palpura*). This cloth is of high value. Pottery once a valuable commodity to these Indians is not alonger made.

Today the main enterprise for the Miskito Indians for barter, exchange or payment are as follows: rubber collecting, banana agriculture, boat making, mine working, cattle and pig raising, general work on rivers, fur from wild animals, and general labor. However, it is to be noted that the Indian could and does in most instances subsist on his immediate environment.

VEGETABLE FOODS

Agriculture is not highly developed on the Mosquito coast, because the many plant-destroying insects limit the process of cultivable products, and the bush springs up early after the ground has been cleared. Thus after two or three crops have been obtained from a plantation (*kanana*), a variety of weedy looking shrubs and grass, which make cultivation difficult, gets a hold on the land. The Indian then does not consider it worthwhile to undertake the labor needed to keep the ground clear but prefers to set up a new plantation (*insla*) by cutting down a patch of usable forest.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

The most important fruit plant of the Miskito is the banana *(sikssa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(duswa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(twas)*, avocados or alligator pears *(sikya)*, soursops *(dwarsop)*, cashews *(kasan)* and plums *(polms)*. The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

them. There is, however, a semiwild growing variety of a purplish color, which is called *usi* by the Miskito and Sumu; this is probably the one mentioned by Dampier (I, 9) and M. W. (310). 244

OTHER VEGETABLES.—Pumpkins and squashes (*Cucurbita pepo* L.; M.: *iwa;* S.: *ati*) are also grown to some extent, while the chayote or chocho (*Sechium edule* Sw.; M. and S.: *mukula*) and the tomato (*Lycopersicum esculentum* Mill.) are cultivated in a desultory way. The latter plant appears to be indigenous, but there is no native name for it.

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BEANS.—The red or black beans (*Phaseolus vulgaris* L.), which rank as a staple food in large areas of northern and western Central America, are grown to a very small extent by either Miskito or Sumu. The red variety is the one usually found; it is somewhat smaller than the red kidney bean of the United States. Both tribes have a native name (M.: *snek, snik;* S.: *sinak*) for the plant; as these designations are also applied to a wild-growing vine, bearing small beanlike fruits, it is very probable that beans have been introduced only in recent times. In fact, this food plant is not mentioned by any one of the seventeenth century authors. 244

RICE.—Rice (*Oryza sativa* L.) is rarely cultivated and has been introduced recently; it is known by its English or Spanish name. The grain is heavy and rounded, and it differs considerably from the native wild rice of tropical America (*Zizania* sp.), with long, narrow, dark grain. 243

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[a] From the Quichua *chontarúru* or *chontaduro*.

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244 CASSAVA.—Sweet cassava (*Manihot palmata* Muell. or *M. aipi* Pohl; M.: *yauhra;* S.: *malai, maley*) is the staple food of the coastal Miskito; it is also cultivated by those living inland, and by the Sumu. This food plant was mentioned by Raveneau de Lussan (438), Exquemelin (Engl. ed.: 251), and M. W. (310). The bitter cassava (*Manihot utilissima* Pohl) is unknown to either Miskito or Sumu, but is largely cultivated in two different varieties by the Black Carib (Garif) and the Paya of Honduras, who eliminate the deadly hydrocyanic acid contained therein by ingenious methods.

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[77] YAMS.—Several varieties of yams (*Dioscorea* sp.) are cultivated; they are of African origin and the Indians have no native name for them.

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245 On the Atlantic slope of Central America this palm is grown as far north as Rio Tinto in Honduras, but on the Pacific side its northern limit is formed by Lake Nicaragua. It is found only in the cultivated state; the palms found occasionally in deserted regions indicate former village sites. A wild variety, bearing inedible small fruits, is found on the Mosquito Coast to the south of Bluefields; it is there known as "pejivalle de monte" or "wild supa."

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249 [177] SUGARCANE.—Sugarcane (*Saccharum officinarum* L.; M.: *kayu*, from the Spanish "caña"; S.: *tisnak*) was brought by the Spaniards during the early part of the sixteenth century to the New World, first to the West Indies and later to the mainland.[a] The various buccaneer authors do not say anything of its occurrence among the Miskito. The first mention of this plant on the Mosquito Coast is found by M. W. (310), who states that the Miskito King Jeremy had some in his plantation, but in those days (1699) the Indians did not yet know how to make sugar from the juice. Nowadays they drink the juice of this plant, after having allowed it to ferment; they also boil it into sirup and brown sugar.

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245 FRUIT TREES.—The most common of the indigenous fruit trees, outside of the ones enumerated above, are the following: Pineapples

[a] Hernán Cortés, the great conquistador of Mexico, introduced the plant from Haiti into Honduras (Trujillo) as early as 1526.

1: Conzemius M-4; 5 (1921) 1932
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(*Ananas sativus;* M.: *pihto;* S.: *masa, masahti*),[44] papaws or papayas (*Carica papaya* L.; M.: *twas, tawas;* S.: *ulmak, ulumak*), avocados or alligator pears (*Persea gratissima* Gaertn.; M.: *sikya;* S.: *sikya, sariñ*), soursops (*Anona muricata* L.; M.: *dwarsap;* S.: *sapot*), guavas (*Psidium guajava* L.; M.: *sikra;* S.: *burimak*), cashews (*Anacardium occidentale* L.; M. and S.: *casau*), and watermelons (*Citrullus vulgaris* Schrad.; M. and S.: *rayapisa*). Spanish plums (*Spondias purpurea* L.), although apparently indigenous, are rarely found, and their Indian name *ploms* comes from the English language.

The most important fruit trees of foreign origin are: Citrus fruits (oranges, lemons, sweet limes, sour limes, shaddocks, grapefruits, citrons), mangoes (*Mangifera indica* L.), breadfruits (*Artocarpus communis* syn. *incisa*), tamarinds (*Tamarindus indica* L.), and rose apples (*Eugenia jambos* L.).

GARDENS.—Around their houses many Indians cultivate also a few fruit trees and other plants. The calabash tree (*Crescentia cujete* L.; M.: *kahmi;* S.: *sutak*) is very common in these gardens; it is esteemed for the very useful kitchen receptacles obtained from its fruit. A few bushes of cotton (*Gossypium peruvianum* Cav.; M.: *wahmuk;* S.: *wahmak*), chilé peppers (*Capsicum* sp.; M.: *kuma;* S.: *asmak, añmak*) and annatto (*Bixa orellana* L.; M.: *aulala, tmariñ;* S.: *awal*) are found near every lodge. A number of flowers are also cultivated, as the African marigolds, purple and white four-o'clocks, and the crimson hibiscus.

FISHING AND FISHING IMPLEMENTS

A very large share of the food supply of these primitive Indians is obtained from the sea, the lagoons, and the rivers. Fishing is therefore an occupation wherein both tribes have attained an unusual degree of skill. The main implements used for this purpose are harpoons, fishhooks, nets, and bows and arrows.

JAVELIN.—The javelin or throwing spear (M.: *wdisku;* S.: *suksuk*) is used in the sea, lagoons, and larger rivers. It consists of a wooden staff, from 8 to 9 feet in length, in the front end of which a sharp barbed steel head has been inserted. The staff is of strong, slender, light wood, generally of a tree called "magaleta" (M.: *sihnak, sinak;* S.: *sina*); the Ulwa, however, use for this purpose the wood of a tree called by them *pan-kuba*, which is said to be superior to the above-mentioned species. The loosely fitting steel point is from 4 to 5 inches long and is made of an old file, wherein several series of double

[44] The old authors, Exquemelin (Engl. edit.: 251), Dampier (I, 9), and M. W. (308, 310), met this fruit among the Miskito during the latter part of the seventeenth century; in those days it was also cultivated by the aborigines of the Corn Islands (Exquemelin, Engl. edit.: 114).

1: Conzemius M-4, 5 (1921) 1932
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323 the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

323 172 531 ANCIENT POTTERY VESSELS.—The pottery objects found in many parts of the Mosquito Coast, chiefly in old burial grounds, indicate a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

172 532 ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, probably the Sumu territory, the discovery of human heads, busts or entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

● 248 CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

286 462 A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

286 TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dôh;* U.: *ani*), girdles or

1: Conzemius M-4, 5 (1921) 1932
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1: Conzemius M-4, 5 (1921) 1932
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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[a]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bfinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *dulala, tmarih;* S.: *awal*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

252 COOKING OILS.—The kernels contained in the seeds of various palms are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), hone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[a] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, hazendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legía sin la ceniza, y a fuego manso la van calentando hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

1: Conzemius M-4, 5 (1921) 1932
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them. There is, however, a semiwild growing variety of a purplish color, which is called *usi* by the Miskito and Sumu; this is probably the one mentioned by Dampier (I, 9) and M. W. (310).

OTHER VEGETABLES.—Pumpkins and squashes (*Cucurbita pepo* L.; M.: *iwa;* S.: *ati*) are also grown to some extent, while the chayote or chocho (*Sechium edule* Sw.; M. and S.: *mukula*) and the tomato (*Lycopersicum esculentum* Mill.) are cultivated in a desultory way. The latter plant appears to be indigenous, but there is no native name for it.

MAIZE.—Maize or Indian corn (*Zea mays* L.; M.: *aya;* S.: *am, ama*), which forms the staple food practically all over Central America, is sparsely cultivated by the Miskito; however, it was already observed among them during the latter part of the seventeenth century by Raveneau de Lussan (438) and by M. W. (308, 310). This food plant is more esteemed by the Sumu, especially by the Twahka and Ulwa, who grow an inferior quality of inbred maize. It is stored by hanging it under the roof over the smoke in order to prevent molding.

BEANS.—The red or black beans (*Phaseolus vulgaris* L.), which rank as a staple food in large areas of northern and western Central America, are grown to a very small extent by either Miskito or Sumu. The red variety is the one usually found; it is somewhat smaller than the red kidney bean of the United States. Both tribes have a native name (M.: *snak, snik;* S.: *sinak*) for the plant; as these designations are also applied to a wild-growing vine, bearing small beanlike fruits, it is very probable that beans have been introduced only in recent times. In fact, this food plant is not mentioned by any one of the seventeenth century authors.

RICE.—Rice (*Oryza sativa* L.) is rarely cultivated and has been introduced recently; it is known by its English or Spanish name. The grain is heavy and rounded, and it differs considerably from the native wild rice of tropical America (*Zizania* sp.), with long, narrow, dark grain.

PEJIVALLE PALM.—The pejivalle or pijibay palm (*Guilielma utilis* Oerst.; M. and S.: *supa*) is cultivated for its edible fruit all over the Mosquito Coast, usually around the Indian huts. The Central American name for this plant appears to have been taken from the Arawak language of Haiti. The palm is probably of South American origin and is extensively cultivated in the tropical part of that continent. It is there known by a great variety of names, of which the following are the best known: Gachipáez, cachipaes or cachipay (Colombia), chonta[a] (Ecuador), piritu, prijao (Venezuela), pupunha (Brazil), paripu, paripi and peach palm (Guianas).

[a] From the Quichua *chontarúrru* or *chontaduro*.

1: Conzemius M-4, 5 (1921) 1932
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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakati* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[38] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin*; S.: *pala*, *lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

[38] Noticias estadísticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1867.

1: Conzemius M-4, 5 (1921) 1932
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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in cocoanut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lâua, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramûira;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tauo*) and several species of granadillas or fruits of passion

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*).

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer.

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [a]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul.

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tchra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukia uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them.

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[a] Bell (b: 27) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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The most important fruit plant of the Miskito is the banana *(siksa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(dusiwa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(tpas)*, avocados or alligator pears *(sikya)*, soursops (*dwarsop*), cashews (*kasan*) and plums (*polms*). The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

1: Conzemius M-4, 5 (1921) 1932
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412 met with in certain parts of South America. The ordinary stone ax may also have been utilized as an adze by merely shifting the handle fixation from a vertical to a horizontal plane.

HOE.—In many huts a hoe can be found nowadays; it is used on the fields and in clearing away the grass and weeds growing in front of the dwellings. The hoe is of recent introduction and is known by its English name (u).

KNIFE.—Large knives (M.: *skiro*, *kiswo*, from the Spanish "cuchillo"; S.: *kohbil*) now form part of every household.

252 SUGAR MILL.—A primitive sugar mill (M.: *trañko;* T., P.: *tisnak tñlnin;* U.: *tisnak panka*) is employed by these Indians to squeeze the juice out of sugarcane. A stout post is buried partly in the ground, so that it will reach about 3 or 4 feet above the surface. Close to its upper extremity a wooden slab is mortised in and wedged tight. Just above this slab, which looks like a small platform, there is a hole in the post, where a stout bar (M.: *mihta;* S.: *tiñ*) fits loosely. One of the women lays a piece of cane on this "platform," her husband inserts the pole in the hole and presses downward, crushing the cane, whereupon the juice flows into a receptacle placed on the ground. The woman slips the cane forward until every part of it is crushed, and finally twists it like a rope to wring out all the juice.

252 171 This mill is common in the regions bordering on the Caribbean Sea. Several mills of this type, found in South America and on the Isthmus of Panama, have been figured by Nordenskiöld.[24] It is well known that sugarcane was introduced into the New World by the Spaniards; still this type of mill is never met with among the whites. On the other hand, the negroes of eastern Central America and the Bush negroes of Guiana use it commonly, more so than the Indians themselves. According to the prominent African specialists Seligman and Lindblom, sugar mills of this type are not met with in the Dark Continent. Neither are they known from Melanesia. Nordenskiöld[25] believes, therefore, that this implement has been invented by American Indians in post-Columbian days, when they had become acquainted with sugarcane. In view of the fact that this sugar mill is more common among the negroes than among the Indians, I am inclined to believe that it is a post-Columbian invention made in America (probably in the West Indies) by negro slaves, who were largely employed on the sugar estates. Even to this day it is not met with among the Sumu of the interior, who crush the canes in primitive wooden roller mills turned by handspikes (cf. Wickham, b: 216; c: 206).

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[24] Comparative Ethnographical Studies, vol. VIII, Göteborg, 1930, pp. 80–84, figs. 39–42.

[25] Ubi supra, p. 82.

1: Conzemius M-4, 5 (1921) 1932
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CULINARY ARTS: METHODS OF FOOD PREPARATION

262 These Indians obtain their food from agriculture, hunting, fishing, and by gathering the wild fruits of the forest. Among the Miskito living near the coast the staple food is sweet cassava, but in the other regions of the country its place is occupied by bananas; among the Sumu maize also plays a great rôle.

252 While at home the men never do any cooking and would consider such an act beneath their dignity, but after the return from the chase they barbecue the meat which is not to be consumed immediately.

261 The Indian has an enormous appetite when there is plenty of food, especially fish and meat, at hand; on the other hand, in case of food shortage, they are able to travel and work with scarcely anything to eat.

264 SERVING OF THE MEAL.—No regularity is observed in eating, but food may be taken at any time. When the meal is ready the grown-up men are served first in their hammocks with the best and largest shares. A calabash of broth or soup (M.: *pilali;* S.: *di wasni, di waska*) and a bijagua leaf containing salt is also taken to them. The women and children eat together; they sit on the ground, forming a circle around the remainder of the food, which is spread upon a layer of large leaves. There is, as a rule, little left when the men have been served, but the women and children have taken their share previously. While the pot is boiling they crowd around the fire, and keep on eating little bits of meat together with plantains or bananas roasted in the hot ashes. The Indians do not speak much during meals; a visitor is never questioned while he is eating, as that would be a breach of etiquette.

262 [252] ANIMAL FOOD.—Meat and fish are either boiled with water or roasted in the hot ashes. The meat is obtained from the chase; the Miskito living on the edge of the savannas also own cattle which they slaughter for meat. Other domestic animals, as pigs and fowls, are seldom eaten, but are commonly sold to strangers; this is also the case with fowl eggs. The Indians, as a rule, do not care much for the flesh and products of animals of foreign origin. Certain indigenous animals are taboo. The favorite meat of both tribes is the red monkey (*Ateles* sp.) and the white-lipped peccary (*Tayassu* sp.).

262 252 The Sumu sometimes eat frogs (M.: *burka;* S.: *burka, burki*), removing their skin first in the hot ashes; to the Miskito this amphibian is taboo. Birds' eggs are eaten, even when they are practically rotten, but the eggs of the domestic fowls are not esteemed. The winged females of the leaf-carrying ants (*Atta cephalotes* syn. *Oecodoma cephalotes;* M.: *wiwi;* S.: *isdaŋ*) are also caught when

1: Conzemius M-4, 5 (1921) 1932
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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakati* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[85] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin;* S.: *pala, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

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[85] Noticias estadísticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1807.

1: Conzemius M-4, 5 (1921) 1932
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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust trees (*Hymenaea courbaril* L.; M.: *lâwa, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramâwa;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *towa*) and several species of granadillas or fruits of passion

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*).

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer.

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [88]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul.

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tahra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukya uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them.

[88] Bell (b: 27) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

1: Conzemius M-4, 5 (1921) 1932
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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[a]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bâinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *dûlala, tmariñ;* S.: *aval*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

252 COOKING OILS.—The kernels contained in the seeds of various palms are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), bone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[a] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, haziendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legía sin la ceniza, y a fuego manso la van calentandio hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink prepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January	*Aladi cati, Inupu cati:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

1: Conzemius M-4, 5 (1921) 1932
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224 coarse and unhealthy and even is taboo. The Miskito call it *tilba*, which name is already mentioned at the end of the seventeenth century in the form *tilbu* (M. W.: 311).

LIZARDS.—The largest lizard is the green iguana (*Iguana tuberculata*) which is generally shot while feeding on the river banks or in the branches of some overhanging tree. Sometimes it tries to escape by dashing into the water, where the Indians attempt to catch it by diving after it. It is sometimes kept alive by the Indians until required for food. For this purpose they break the thighs and arm-bones, and put the backbone out of joint; or else they twist the legs and tie the front ones over the back and the hind ones over the tail by their own sinews. The poor animal is thus unable to run away. The eggs of the iguana are also highly esteemed.

BIRDS.—Various species of guans (*Penelope*, *Ortalis*, *Pipile* [49]), the yellow-crested black curassows (*Crax* sp.), mountain hens (*Tinamus* sp.), quails (*Ortyx* sp.), partridges (*Odontophorus* sp.), pigeons (*Columba* sp.), and wild ducks (*Cairina moschata*) are esteemed as game birds.

224 RETURN FROM THE CHASE.—After the chase the game is carried on
482 the back to the canoe. When a large animal, as a peccary, has been killed each fore and hind foot are tied together with the aid of withes. The Indian, putting his arms through the loops thus formed, with the beast's head downward, carries it on the back, as if shouldering a knapsack. A strap passing over the forehead may also be attached to help support the load. If the hunters are unable to carry all the game at one time the remainder is hung on the branches of some tree, to keep it out of reach of prowling animals.

224 Arrived at his settlement, the Indian merely takes his arms and paddle and walks home, sending his wife down to the waterside to fetch the game. The hair of the latter is then singed by a fire made in the open. The neighbors, who are generally near relatives, receive a share of the meat.

● 261 Then a big pot is put on the fire, for the Indians do not think of the morrow and, if possible, consume all the meat at once. The women and children do not have patience enough to wait until it is cooked, but they cut off small slices, which they roast over the hot coals and eat, with a few bananas or plantains. If they are unable to dispose of all the supply on the first day the remainder is barbecued without salt over a slow fire. (See Culinary Arts.)

224 HUNTING CHARMS.—Many charms are used for luck in hunting.
111 Stones or pebbles, found in the stomach of certain animals, are

[49] The large guan (*Penelope* sp.) is called *kuamu* by the Miskito, a name found already by M. W. (311) in the form *quaumoss*.

1: Conzemius M-4, 5 (1921) 1932
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CULINARY ARTS: METHODS OF FOOD PREPARATION

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The eating of earth (M.: *tasba;* S.: *sdû*), clay (M.: *sldûbla;* S.: *sdû*), sand (M.: *dûya;* S.: *kdûhmak*), and charcoal (M.: *kwasko, tnasko;* S.: *kusmak*) is very common among women and children. 261

NONFERMENTED BEVERAGES

DRINKING WATER.—The whole country is well watered and the Indians obtain their drinking water from the running streams on the banks of which their settlements are generally situated. Wells are also dug by those living near the sea. 312

WATER LIANAS.—Several varieties of water lianas, varying in size from 3 to 5 inches, can be found throughout the forest. When the stem is merely cut through only a few drops of water will issue; the vine must then be severed immediately about 2 or 3 feet farther down, whereupon a continual stream of water will flow, quite sufficient to quench the thirst of a person. The Indian holds the severed part of the stem in a vertical position, allowing the sap to run directly into the mouth. The vine must be cut above first, otherwise the sap will ascend so rapidly that hardly any will be obtained.

HONEY.—The Indians are very fond of the honey (M.: *naema;* S.: *aiwak*) from the various species of wild, stingless bees which make their nests in hollow trees. The entrance to the nest is easily ascertained by watching the little bees flying about. The Indians either climb or fell the tree in order to get possession of the honey. The latter is always taken as a beverage, after being mixed with water, but even in its natural state it is not viscid, but almost as fluid as water. It has a subacid, highly fragrant taste. The Indians, while away from home, may make a meal of the contents of such a bee nest, but the average foreigner does not care much for it, and finds it greatly inferior to that of the European domesticated bee. The natives collect in bamboo joints what they are unable to consume immediately to take home to their family. 222

MILK.—The consumption of cow's milk is not general. When I inquired the reason from some Sumu of the upper Rio Waspuk they answered that they are not the descendants of cows, to drink their milk. 272

BANANAS AND PLANTAINS.—A great variety of nourishing drinks of vegetable origin are prepared by the Indians under consideration. Bananas are consumed largely in the shape of a pop, known locally by the name "wabul." The bananas for this purpose are used generally in the green state, before their contained starch has turned into sugar. They are peeled and cooked in an iron pot. Then the water is poured off and the bananas are thoroughly mashed in the same pot with the aid of a short wooden stick. During this process cold water is added little by little, and the whole is well stirred. No salt

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

DIVISION OF LABOR

DOMESTIC WORK.—Such domestic industries as spinning, weaving, and the manufacture of pottery, bark cloth, and bead ornaments are female occupations. Tailoring is, however, frequently in the hands of the men, some of whom even make the clothes for their wives. The preparation of food is strictly reserved to the women, the men never condescending to do any cooking, except while away from home. The barbecuing of the chase is, however, the work of the men. 462

FIELDS.—The husband prepares a patch of the forest for the making of a plantation, by cutting down the trees and cleaning the ground by burning; but the care of the field, that is the planting, weeding, and reaping of the crop, is left to the women.

OTHER OUTSIDE OCCUPATIONS.—The manufacture of fishing and hunting implements, and of canoes and accessories thereto, are man's work. The women fish with the hook, but all other methods of fishing are reserved to the men. The latter fell trees for firewood and cut them into convenient lengths to haul, but the females have to fetch and split it. The woman goes to the waterside to bring the game which her husband has killed and brought in his canoe, but she never accompanies him on the actual hunt, being unacquainted with the handling of hunting weapons.

LOAD CARRYING.—The carrying of heavy loads is usually left to the women. For this purpose they use a carrying strap, known by the local Spanish name "bombador" or "bambador." The latter consists of a narrow strip of bark cloth, both extremities of which are attached to the burden. The load is first lifted on the back with the assistance of another person and then the pack strap is put around the forehead. The male Indians do not carry anything in this manner, but they secure the package to the back with the aid of shoulder straps, as do the Ladinos. The Spanish-speaking women, however, carry loads generally upon the head, as is the case with the negroes of both sexes. When very tired the Indians give a sort of whistle to catch their breath (M.: *wiñka puhbaya;* T. & P.: *wiñka wupdanin;* U.: *wiñka wupdanaka*, lit.: "to blow the breath"). 462 482

DAY LABOR WORK.—In former days many young Miskito, living to the west of Cabo Gracias a Dios, went annually to British Honduras to work there in the mahogany or logwood camps. They left about May and returned in November or December. During this time the settlements on the coast were practically without male inhabitants, except for the boys and old men. The women then had to subsist on fish, crabs, oysters, cockles, the eggs of alligators, turtles, and iguanas, and vegetable food. Now all these Indians easily find work in their own country, either in the mahogany camps or in the 464 [484] [262]

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] 225 CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

172 A small bivalve mollusk, known locally as "cockle" (M. and S.: *āhi*), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjøkkenmødding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 777 FISHING CHARMS.—Certain charms are said to be very efficacious at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

CULINARY ARTS: METHODS OF FOOD PREPARATION

262 These Indians obtain their food from agriculture, hunting, fishing, and by gathering the wild fruits of the forest. Among the Miskito living near the coast the staple food is sweet cassava, but in the other regions of the country its place is occupied by bananas; among the Sumu maize also plays a great rôle.

252 While at home the men never do any cooking and would consider such an act beneath their dignity, but after the return from the chase they barbecue the meat which is not to be consumed immediately.

261 The Indian has an enormous appetite when there is plenty of food, especially fish and meat, at hand; on the other hand, in case of food shortage, they are able to travel and work with scarcely anything to eat.

264 SERVING OF THE MEAL.—No regularity is observed in eating, but food may be taken at any time. When the meal is ready the grown-up men are served first in their hammocks with the best and largest shares. A calabash of broth or soup (M.: *pilali;* S.: *di waeni, di waska*) and a bijagua leaf containing salt is also taken to them. The women and children eat together; they sit on the ground, forming a circle around the remainder of the food, which is spread upon a layer of large leaves. There is, as a rule, little left when the men have been served, but the women and children have taken their share previously. While the pot is boiling they crowd around the fire, and keep on eating little bits of meat together with plantains or bananas roasted in the hot ashes. The Indians do not speak much during meals; a visitor is never questioned while he is eating, as that would be a breach of etiquette.

262 [252] ANIMAL FOOD.—Meat and fish are either boiled with water or roasted in the hot ashes. The meat is obtained from the chase; the Miskito living on the edge of the savannas also own cattle which they slaughter for meat. Other domestic animals, as pigs and fowls, are seldom eaten, but are commonly sold to strangers; this is also the case with fowl eggs. The Indians, as a rule, do not care much for the flesh and products of animals of foreign origin. Certain indigenous animals are taboo. The favorite meat of both tribes is the red monkey (*Ateles* sp.) and the white-lipped peccary (*Tayassu* sp.).

262 252 The Sumu sometimes eat frogs (M.: *burka;* S.: *burka, burki*), removing their skin first in the hot ashes; to the Miskito this amphibian is taboo. Birds' eggs are eaten, even when they are practically rotten, but the eggs of the domestic fowls are not esteemed. The winged females of the leaf-carrying ants (*Atta cephalotes* syn. *Oecodoma cephalotes;* M.: *wiwi;* S.: *isdaŭ*) are also caught when

1: Conzemius M-4, 5 (1921) 1932
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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakati* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of [illegible] that cannibalism existed among the Sumu. It was reported [illegible] Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[85] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin;* S.: *palá, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

[85] Noticias estadísticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1867.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lāua, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramāira;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tawa*) and several species of granadillas or fruits of passion

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulva*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

List of Foods Grown by the People in the Caribbean Lowlands:

American origin:
- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Eddoe (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Bean (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Pataste.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Usi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

Foreign Origin:
- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

Fishing.—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

In recent times important contributions with regard to the Miskito 114
Indians have been made by H. J. Spinden,[25] A. H. Schultz,[26] D. E. Harrower[27] and the exhaustive investigations of E. Conzemius.[28]

THE TROPICAL SITUATION

The status of peoples living in the tropics and semi-tropical regions 262
varies considerably, depending on environment and man's adaptation to his habitat.[29]. Different foods are produced under different conditions. Thus, in the inner jungles and in certain highlands, very little food may be available; along the rivers it may be plentiful, and along the seashore other food sources may manifest themselves. Climate, geography, and socio-economic factors have a direct bearing on food availability and consumption.[30] Food habits naturally follow a similar 262
pattern: the classical tortilla of Mexico and the Middle American coun- 177
tries; the use of manioc in the Amazon area; the dehydrated potato (chuño) of the Andean altiplano, the all too starchy diet which has developed in the Caribbean areas, all have their explanation in the factors typical of each area. Furthermore, when natives come into contact with other cultures, deculturation processes in the dietary pattern often take place.[31] These deculturation processes are not limited to clashes between Indian and white cultures, such as prevail in most of Latin America, but to the adaptation and absorption of dissimilar cultures not of Indian origin, such as in Puerto Rico and the southwestern States of this country, where the Hispanic and the Anglo-Saxon mode of life meet. Procurement of food in industrial areas by low income groups may modify the diet considerably. With this in mind no gene-

[25] Spinden, H. J. The Chorotegan Culture area. XXIe Congrès International des Americanistes (529-545) Goteborg, 1925.

[26] Schultz, A. H. Anthropological Studies on Nicaraguan Indians. Amer. Jour. Physical Anthropology, 1926, *9*, 65-80.

[27] Harrower, D. E. Rama, Mosquito and Sumu, of Nicaragua. Museum of American Indian, Heye Foundation. 1925, *2*, 44-48.

[28] Conzemius, E. (see footnotes Nos. 1 and 23), also: Die Rama Indianer von Nicaragua. Zeitschrift fur Ethnologie, 1921, *59*, 291-362 (Berlin); Apuntes sobre algunos Nombres Geográficos Mosquitos en Costa Rica y Panamá. Revista de Costa Rica, 1922, 300-306; Les îles Corn de Nicaragua. La Geographie, 1929, *52*, 346-362 (Paris).

[29] Pijoán, M. Certain Factors involved in the Struggle Against Malnutrition and disease. Univ. of New Mexico Press, 1943. Inter-Americana Monographs.

[30] Eggan, F., and Pijoán, M. Some Problems in the Study of Food and Nutrition. América Indígena. 1943, *3*, 9-23.

[31] Pijoán, M., and Elkin, C. A. Secondary Anemia due to Prolonged and Exclusive Milk Feeding Among Shoshone Indian Infants. Jour. Nutrition, 1944, *27*, 67-75.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zamboa. The other three tribes, however, are practically of pure Indian blood. In earlier times, the western region of the Mosquito coast was occupied by the Matagalpa Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

The Miskito and small isolated bands of Suma Indians inhabit the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive additional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[35] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[28]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[35] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk suplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300), II. Ossification of the bones of the wrist (pp. 494-509), III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, 56.

3: Pijoan D-5 (ca. 1945) 1946
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The most important fruit plant of the Miskito is the banana *(sikya)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(dusiwa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(twas)*, avocados or alligator pears *(sikya)*, soursops (*dwarsop*), cashews (*kasan*) and plums (*poims*). The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink ptepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January *Aladi cati, Inupu cati:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

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February	*Cuswa cati, islu cati:* tortoise time, iswilly lizard time. Few citrus fruits, coconuts or vegetables.
March	*Cocamuk cati:* iguana season. Few green vegetables or fruits.
April	*Willi wantca cati:* male turtle time. Coconuts, very few vegetables, few bananas.
May	*Willi Mayrhen cati:* female turtle time. More bananas, plantains and coconuts.
June	*Li cati:* rain month. Same as May.
July	*Pastara cati:* high wind time. Same as May, a few more greens, bananas.
August	*Sicla cati; wis cati:* ? Few citrus fruits, more greens, bananas.
September	*Wis cati:* wis month.
October	*Sauht cati, prarhi cati:* south wind month, hurricane time. Food consumption depends to a great extent on the weather. Wild fruits, citrus fruits.
November	*Yahibra cati:* north wind time. Citrus fruits, wild fruits.
December	*Krismas cati:* Christmas month. Fewer vegetables and fruits consumed.

During May, June and July no greens of any kind are available; this is true also during late December and January. Meat consumption remains fairly constant.

Average meat intake per day (June)	960 grams.
Other fruits and foods (June)	400 grams.

The above was the approximate daily consumption of my head boatman, Ramón. Others ate a little more or a little less, but the proportion was about the same. Apparently, members of most families consume about the equal amounts of meats and vegetables as he did. On the other hand, following a hunt, the meat consumption increases significantly and sometimes an entire animal is eaten at one sitting. Be it noted that meat is usually secured from hunting or fishing. This is somewhat striking when one observes the large numbers of turkeys among the families. It is assumed that as such these birds would be eaten frequently but instead they are consumed rarely; they are household pets. To some extent this is true of chickens. Pigs, on the other and, are more frequently eaten; they require little care and in general forage for themselves. Cowmeat, steermeat, heifer meat, etc., is obtained from the occasional slaughter of domestic cattle. The latter are plentiful.

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262 [222] The Indians also secure honey from wild honey bees. In the Coco territory there are various species of stingless bees *(Meliponidae)*. The honey cells are circular and the honey is yellow and slightly acid in taste, it does not crystallize when kept for sometime. Previous to the introduction of sugar cane the honey was used to sweeten food.

The most important food of the Miskito Indian is the banana, even though it is not indigenous to America. As such this is one of the few examples where a food originally foreign to a people was immediately accepted an chronically utilized. On the other hand the use of cereals so common throughout the Americas, is infrequent. The reason for this is that cereals are difficult to grow in this territory. The numerous insects which attack certain types of vegetable or plant life restricts agricultural enterprise. Furthermore there appears to be no need of cereals in the diet. Beans have recently been introduced and in some communities they have been raised for eating purposes.

Oils are easily prepared from coconuts or varieties of nuts. These are crushed and placed in boiling water, and in due course the oil rises to the surface and is skimmed off.

262 177 It can be said that the Miskito Indians living as they are, unmolested, by the banks of rivers and streams secure enough wild fruits, vegetables, fish and game to adequately supply the yearly food. To this is added small agricultural projects of their own, such as banana plantations, citrus fruits, etc. When these Indians become sequestered in larger villages or are removed from their community to work for mines, rubber collection, or as laborers for fruit companies, the dietary deteriorates. To secure food under these new circumstances they need money, a substance which is easily expendable and does not represent a material which may be needed in the future. The Rubber Development Corporation has had in many instances fed laborers on foreign foods which have not always agreed with or been agreeable to workers.

NUTRITIONAL EVALUATION OF THE DIET

121 The evaluation of the nutritional status of individuals from any single examination of their diet is difficult if not impossible. There are widely divergent views regarding the needs of the body, as to the extent and character of the food requirements, of the relative merits of various foods and as to the degree and frequency of intake of the nutritional components. A survey of dietary intakes will often make one suspect a deficiency and may warn the investigator what to seek for In the end clinical appraisal is the only satisfactory method. There is

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of rain and humidity have eroded, the pit fills with water and the entire construction fills with flies. The dysentery epidemics at San Carlos usually begin about these latrines and extend to the periphery of the village.

Another contributing factor to the spread of dysentery is that in some areas well meaning visitors have encouraged the use of milk for children. In a territory devoid of refrigeration or adequate sterilization the use of milk should be derived from the mother's breast or directly from the cow's udder. On the other hand milk products such as cheese are less likely to be infected. Nevertheless, milk fluid serves as an excellent bacterial medium. Powdered milk might obviate such a hazard.

Drinking water in the larger villages may be considered a source of infection since water may be stored in containers not ideally suited for such a purpose or the water may be collected from the main river or other pools simply because the source is conveniently located.

The Indian customs are such as to depress the occurrence of dysentery. These customs are to drink water from clear running creeks (see map of San Carlos), and to perform their ablutions either in the large river or to dig holes for their excremata. If holes are dug in the bush they are immediately covered up after use. The Indian, unless educated otherwise, considers the communal use of a structure such as a collecting booth for feces and urine as an evil. It would thus appear that the invading culture (Spanish American) with its convenient latrine often in juxtaposition to the latrine, has furthered the dysentery problem.

Some of the latrines observed were of such a character that even the investigators used to the inconveniences of the bush felt repelled by the utterly uninviting stench and the great scatter of soiled paper throughout the establishment. Toilet paper, in many tropical areas of high humidity, offers itself as a remarkable medium for growth of molds which renders the paper useless. Latrines built by special sanitary engineers were misused, had eroded screens and were halt filled with water. During the dry season when they were erected they were presumed to be ideal and satisfactory in every way.

If the wretched latrine is to be used, the use insecticides and disinfectants must be encouraged, otherwise dysentery will be present. The authors of this report endeavored to encourage the Indian practice of waste disposal.

Amoebic dysentery exists as far as could be determined in from 2-5 per cent of the population. Stool examinations at Waspam, revealed that 7 per cent of the adults and 2 per cent of the children had

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231 sp.), agouti (*Dasyprocta* sp.), deer (*Odocoileus* sp. and *Mazama* sp.), squash or coati (*Nasua narica*), and raccoon (*Procyon lotor*).

Wickham (b: 163; c: 200) even saw a tame otter among the Ulwa of Rio Escondido. The Indian women have great patience in taming young animals and they will suckle them as they would their own children. These animals are generally caught while still very young.

INDIGENOUS BIRDS.—The domestic turkey is now found in almost every hut. Among the other native birds which are usually tamed by the Indians are the following: curassow (*Crax* sp.), guan (*Penelope* sp.), mountain hen (*Tinamus* sp.), muscovy duck (*Cairina moschata*), macaw (*Ara* sp.), parrot (*Chrysotis* sp.), parrakeet (*Conurus* sp.), toucan (*Ramphastos* sp. and *Pteroglossus* sp.).

The birds are taken out of the nest while still young, but old birds are occasionally tamed. When slightly wounded or when shot with a blunt arrow they are carried home and kept for a few days without any food. After that they become generally very docile and are ready to eat the food given to them.

231 NATIVE BEES.—Various species of the native stingless bees are occasionally found in a semidomesticated state around the Indian 263 huts. About a dozen species are found in the country, all belonging to the family of the Meliponidae. The largest of them is about the size of the European bee. The honey cells are circular and the honey is yellow and slightly acidulous in taste; it does not crystallize when kept for some time, as is the case with that of the European bee. It is slightly laxative and is generally diluted with water, either fresh or after having been allowed to ferment. Previous to the introduction of sugar-cane, honey was used to sweeten food. The wax, which is 237 light brown in color, is used as "cement" in the making of arrows, spears, and other implements; in certain regions it is also used for 222 lighting purposes. The Indians also collect the honey from the bee nests in the forests and store it in large bamboo joints.

231 DOMESTIC ANIMALS OF FOREIGN ORIGIN.—The most common domestic animals are the dog, pig, cattle, and fowl, while the horse, cat, goat, 177 and sheep are rarely seen. All these animals are of foreign origin and have been introduced from the interior of Honduras and Nicaragua. Among the Indians they are known almost invariably by their Spanish or English name.[40] When the Indian family travels all the livestock is taken along.

231 CATTLE.—Cows (M.: *bip*, from the English "beef"; S.: *toro*, from the Spanish *toro* "bull") are owned by many Indians, especially those living in the savannas. They feed on the coarse grass, there being no artificial pastures made by the Indians. The cows are rarely

[40] The Ulwa, however, call the cow and the horse by the native names they apply to deer (*sana*) and tapir (*pamko*), as do a number of other tribes in Central and South America.

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276 Still, it is not certain that tobacco was known to these two tribes in pre-Columbian days. Their names for the plant (M.: *twako;* S.: *aka*) point toward its introduction by the Europeans. The Indian tribes living on the Pacific side of Nicaragua at the time of the discovery knew tobacco, however, and they smoked it in the form of cigars. Our name "tobacco" comes from the word *tabaco*, which the Indians of Haiti applied to a sort of pipe. This instrument consisted of a small wooden tube, shaped like a Y; the two points of it were inserted into the nose, while the other extremity was held in the smoke of burning tobacco, and thus the fumes were inhaled.

[439] At the present time the plant is not cultivated by the Indians under consideration. Leaf tobacco is imported from the United States, and this foreign product is preferred to the one raised in Central America. Among the Sumu smoking is confined principally to the men, but this practice is common enough among Miskito women and children. The leaf is smoked chiefly in pipes (M.: *twako mina;* S.: *aka pan, aka pana*), which are made locally of clay, wood, or maize cobs; imported clay pipes are also bought in the shops. According to Wickham (c: 206), the Ulwa of Rio Escondido do not smoke the pipe, but use the leaf rolled roughly in cigar form made on European models. Very few chew tobacco, while the habit of snuffing is entirely unknown. Among the females the pipe is frequently passed round, each one of the women present taking a few puffs and then passing the pipe to her neighbor. A supply of tobacco is a readily accepted currency for the acquisition of food in the more primitive parts of the country. For small favors the traveler is also expected to give one or more tobacco leaves in exchange.

263 CAYENNE OR RED PEPPER.—Various species of very pungent, small red peppers (M.: *kuma;* S.: *anmak, añmak*), growing in a semiwild state on perennial shrubs (*Capsicum frutescens* L. and *C. baccatum* L.), are used with food as a stimulant and as an excitant. They were found in the Miskito kitchen during the times of Dampier (I, 9).

The Miskito usually prepare a "sauce" (M.: *kuma laya;* S.: *añmak warni, añmak waska*) with these peppers, which they mash and then add some lime juice and salt. They store it in bottles and pour a small quantity of the liquid on their food while eating. The Sumu, on the other hand, grind the red peppers on the metate together with coarse salt. Upon serving the meal the women place a little of this mixture on a large leaf, and every one seasons his own food. These peppers may also replace salt entirely. The large "sweet" chilies (*Capsicum annuum* L.), which grow on annual plants, are also occasionally planted and eaten as a vegetable.

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SALT.—There is no record of the Indians obtaining salt from the natural salt incrustations found occasionally in the country, and which are visited by certain wild animals.

The Miskito living near the seaside occasionally get salt by boiling the water of the sea or the adjacent brackish lagoons. At the height of the dry season the lagoons are said to be even richer in salt in certain parts than the sea itself. The water is boiled in big iron pots until evaporated, and the salt remains at the bottom in the form of a cake. The Sumu living a short distance inland from Rio Prinsapolca and Brangman's Bluff employed in former days a very primitive and laborious method, which is described as follows by M. W. (302): "They make a great fire close to the seaside, which when it has well burned the sticks asunder, they make them singly, and dip the brand in the sea, snatching it out again, not too soon, nor too late; for, by the first, the drops of salt water which remain boiling on the coal would be quite consumed through too much heat, the coal not being sufficiently quenched, and, by the latter mismanagement, would be quite extinguished, and want heat to turn those drops of water into corns of salt, which, as fast as made, they slightly wipe off with their hand into a leaf, then put that brand's end into the fire again, and take out the fresh ones successively, that in half an hour's time a man makes about a pound of grey salt."

In practically all the Central American languages the names for salt and sea are identical. The Miskito have, however, no native name for salt and call it by the Spanish word *sal*, while their term for sea is *kabo*.* The Sumu call both sea and salt *kuma*, which latter name the Miskito apply to red peppers or chilies.

SUBSTITUTE FOR SALT.—The Sumu of the interior make a substitute for salt from the ashes of the midrib of certain palms, in particular the pacaya or mountain-cabbage palm (*Chamaedorea* sp.; M.: *silina;* S.: *tapal*) and a smaller, spiny species, known by the Indian name *kakka*. The ashes are collected in a vessel with hot water, in order to dissolve their contained salts. After removing all impurities, the solution is evaporated in a large earthen vessel by boiling it down over a slow fire, whereby a whitish crystalline matter becomes deposited, which furnishes a good substitute for salt. This method was observed by the Franciscan missionary Fernando de Espino in 1667

* Cabo is the Spanish name for "cape," and the phrase "El Cabo" is used for short for the settlement Cabo Gracias a Dios situated at the mouth of Rio Coco. On the strength of this it has been claimed by some that the Miskito were originally an inland tribe, who had no knowledge of the sea, and that they first saw it when they emigrated from the interior down the Rio Coco to El Cabo, adopting therefore this latter name to designate that great water sheet. This explanation is of course unsatisfactory.

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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[88]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bâinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *dûlala, tmariñ;* S.: *awal*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

COOKING OILS.—The kernels contained in the seeds of various palms
252 are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), bone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[88] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, hazendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legia sin la ceniza, y a fuego manso la van calentando hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

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The most important fruit plant of the Miskito is the banana *(siksa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(duswa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(twas)*, avocados or alligator pears *(sikya)*, soursops *(dwarsop)*, cashews *(kasan)* and plums *(polms)*. The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

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252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
● 263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink prepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January *Aladi cuti, Inupu cuti:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

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CULINARY ARTS: METHODS OF FOOD PREPARATION

262 These Indians obtain their food from agriculture, hunting, fishing, and by gathering the wild fruits of the forest. Among the Miskito living near the coast the staple food is sweet cassava, but in the other regions of the country its place is occupied by bananas; among the Sumu maize also plays a great rôle.

252 While at home the men never do any cooking and would consider such an act beneath their dignity, but after the return from the chase they barbecue the meat which is not to be consumed immediately.

261 The Indian has an enormous appetite when there is plenty of food, especially fish and meat, at hand; on the other hand, in case of food shortage, they are able to travel and work with scarcely anything to eat.

● 264 SERVING OF THE MEAL.—No regularity is observed in eating, but food may be taken at any time. When the meal is ready the grown-up men are served first in their hammocks with the best and largest shares. A calabash of broth or soup (M.: *pilali;* S.: *di wasni, di waska*) and a bijagua leaf containing salt is also taken to them. The women and children eat together; they sit on the ground, forming a circle around the remainder of the food, which is spread upon a layer of large leaves. There is, as a rule, little left when the men have been served, but the women and children have taken their share previously. While the pot is boiling they crowd around the fire, and keep on eating little bits of meat together with plantains or bananas roasted in the hot ashes. The Indians do not speak much during meals; a visitor is never questioned while he is eating, as that would be a breach of etiquette.

262 [252] ANIMAL FOOD.—Meat and fish are either boiled with water or roasted in the hot ashes. The meat is obtained from the chase; the Miskito living on the edge of the savannas also own cattle which they slaughter for meat. Other domestic animals, as pigs and fowls, are seldom eaten, but are commonly sold to strangers; this is also the case with fowl eggs. The Indians, as a rule, do not care much for the flesh and products of animals of foreign origin. Certain indigenous animals are taboo. The favorite meat of both tribes is the red monkey (*Ateles* sp.) and the white-lipped peccary (*Tayassu* sp.).

262 252 The Sumu sometimes eat frogs (M.: *burka;* S.: *burka, burki*), removing their skin first in the hot ashes; to the Miskito this amphibian is taboo. Birds' eggs are eaten, even when they are practically rotten, but the eggs of the domestic fowls are not esteemed. The winged females of the leaf-carrying ants (*Atta cephalotes* syn. *Oecodoma cephalotes;* M.: *wiwi;* S.: *isdaŋ*) are also caught when

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cotton fluff is placed in the notch and the twirling continued. Several 373
fragments of the cotton begin to glow and these are fanned into flame. Today, many Indians use matches but the primitive method of making fire is still used to a great extent. Many of these fires may have been started a generation or more ago. They are tended or kept burning in iron or stone cooking ovens within the houses.

Many of the Miskito use bamboo tongs or tweezers to pull roasted 415
plantains, cassava, and other foods out of the hot ashes. The Miskitos use large wooden mortars *(uno, no)* and hard wooden pestles *(una, mihta)* to pound grains and fruits. The pestle is single headed and tapers toward the handle end. The Sumu Indians on the other hand use a metate and mealing stone for grinding maize and cacao. Light iron tripod post *(dikwa)* are found in every household, and have replaced earthen vessels for cooking purposes. Large calabashes with a small hole in the apex, just large enough to insert a finger, are the common water canteens *(kahmuntara)*. Segments of a large species of bamboo are also used to haul water in certain areas. They are made from a section of the bamboo stem cut so that a nodal septum serves as a bottom. The stem may be cut off immediately below the next septum or it may be cut outside of each septum to convert it into a small barrel. A hole is then drilled for filling and a plug inserted.

Fermented beverages are stored in large earthen vessels *(sumi)*. Plates, cups and glasses are made from the calabash *(kalmi)* fruit, which is cut and the soft watery pulp and seeds removed. Square, round, or oval shaped bowls are sometimes made of mahogany and other woods, but calabash bowls seem to be preferred. A variety of wooden spoons, pat sticks, and stirring sticks are also used. A primitive sugar mill *(tranko)* is employed to squeeze the juice from sugar cane.

It has been observed that the Miskito Indian has an enormous ap- 264
petite. At some meals he may take as many as a dozen helpings. On the other hand he may go days with hardly any food at all, specially during inclement weather, or during a hunt or a long travel. Generally, the women do the cooking, the men only on trips away from home. No regularity is observed in eating, most of the Indians eating whenever they are hungry or after hunting. They usually have one meal in the early morning and one at night before retiring. There is no midday meal. When a meal is ready the grownup men are served first with the best and largest shares. A calabash of soup or stew is usually served first. Salt if available is eaten separately. The women and children eat together. Indians rarely speak during a meal, and a visitor is never questioned while he too should remain in silence, since to do otherwise would be a breach of etiquette.

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found in the works of the historians Juarros, León Fernández, R. Fernández Guardia, Ayón, Gámez, and Vallejo.[87]

In 1722 Spain protested to the British authorities of Jamaica on account of these slaving expeditions, alleging that the Miskito had captured in the valley of Rio Matina and on Tojares Island (Chiriqui Lagoon) over 2,000 Indians (Talamancas, Viceitas, Arinamaes, Abubaes) and sold them to Jamaican traders for arms and ammunition. On October 8, 1722, Diego de la Haya, Governor of Costa Rica, addressed a note to the authorities of Jamaica for the restitution of these Indians. (Peralta, a: 20–31; Fernández: IX, 153.)

The Sumu apparently did not enslave their prisoners, but killed them outright. Scalping was unknown, but the teeth and nails were extracted from the unhappy victims and carried round the neck as trophies. Certain subtribes of the Sumu were cannibals and roasted the enemies captured in war.

ALLIANCE OF THE MISKITO WITH THE BUCCANEERS.—During the seventeenth century the buccaneers, who were active in the Caribbean Sea preying upon the commerce of Spain, entered into friendly and commercial relations with the Miskito, who likewise were the enemies of the Spaniards. According to Exquemelin the first buccaneer vessel anchoring at Cabo Gracias a Dios was French. The captain was well received and made a few presents to the Indians, who in turn gave him products from their fields. When he left he carried along two of these Indians in order to provide his vessel with food, having observed their great skill in fishing. The two Indians were well treated; they learned French, and after one or two years were carried back home again. From that time the French and the Miskito became friends. Indian women were given to the former during their stay at Cabo Gracias a Dios and in payment the buccaneers gave iron tools. They had no trouble in being supplied with Indian fishermen when they left for a cruise, and some of them even picked up the Miskito language. The French made the English acquainted with their new friends. Many Indians served three or four years on the vessels of the buccaneers, learning either French or English, and then were paid off in iron tools (Exquemelin, Engl. ed.: 250; French ed.: II, 262–264).

It would appear, however, that later the English buccaneers were more esteemed than the French. Dampier (I, 8) states that the Indians "like the English but do not love the French," while according to Sloane (a: I, p. LXXVIII) the Miskito "do not allow any other nation but the English to settle among them and that they have

[87] See also Gaceta oficial de Costa Rica, 1864; A. von Frantzius, Archiv für Anthropologie, IV, 1870, p. 104; Thiel, Datos cronológicos para la historia eclesiástica de Costa Rica San José, under 1688; Restrepo, Viajes de L. Wafer, Bogotá, 1888, p. 110.

1: Conzemius M-4, 5 (1921) 1932
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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakati* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[8] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin;* S.: *pala, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

[8] Noticias estadisticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1857.

2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*).

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer.

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [88]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul.

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tahra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukya uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them.

[88] Bell (b: 27) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

1: Conzemius M-4, 5 (1921) 1932
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The eating of earth (M.: *tasba;* S.: *sdū*), clay (M.: *sldūbla;* S.: *sdū*), sand (M.: *dūya;* S.: *kdūhmak*), and charcoal (M.: *kwasko, tmasko;* S.: *kusmak*) is very common among women and children. 261

NONFERMENTED BEVERAGES

DRINKING WATER.—The whole country is well watered and the Indians obtain their drinking water from the running streams on the banks of which their settlements are generally situated. Wells are also dug by those living near the sea. 312

WATER LIANAS.—Several varieties of water lianas, varying in size from 3 to 5 inches, can be found throughout the forest. When the stem is merely cut through only a few drops of water will issue; the vine must then be severed immediately about 2 or 3 feet farther down, whereupon a continual stream of water will flow, quite sufficient to quench the thirst of a person. The Indian holds the severed part of the stem in a vertical position, allowing the sap to run directly into the mouth. The vine must be cut above first, otherwise the sap will ascend so rapidly that hardly any will be obtained.

HONEY.—The Indians are very fond of the honey (M.: *nasma;* S.: *amak*) from the various species of wild, stingless bees which make their nests in hollow trees. The entrance to the nest is easily ascertained by watching the little bees flying about. The Indians either climb or fell the tree in order to get possession of the honey. The latter is always taken as a beverage, after being mixed with water, but even in its natural state it is not viscid, but almost as fluid as water. It has a subacid, highly fragrant taste. The Indians, while away from home, may make a meal of the contents of such a bee nest, but the average foreigner does not care much for it, and finds it greatly inferior to that of the European domesticated bee. The natives collect in bamboo joints what they are unable to consume immediately to take home to their family. 222

MILK.—The consumption of cow's milk is not general. When I inquired the reason from some Sumu of the upper Rio Waspuk they answered that they are not the descendants of cows, to drink their milk. 272

BANANAS AND PLANTAINS.—A great variety of nourishing drinks of vegetable origin are prepared by the Indians under consideration. Bananas are consumed largely in the shape of a pop, known locally by the name "w[illegible]bul." The bananas for this purpose are used generally in the green state, before their contained starch has turned into sugar. They are peeled and cooked in an iron pot. Then the water is poured off and the bananas are thoroughly mashed in the same pot with the aid of a short wooden stick. During this process cold water is added little by little, and the whole is well stirred. No salt

1: Conzemius M-4, 5 (1921) 1932
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●272 is added. Wabul is served generally between the meals; if a stranger arrives at an Indian village the women will immediately prepare some of this beverage for him. Rarely do they offer any to a white man unknown to them, as uneducated foreigners have at times refused with disdain the wabul offered to them. The drink is always served in calabashes, which are the drinking vessels of the Indians. Ripe bananas and plantains are also used occasionally in making wabul, but green plantains are too tough and hard to mash. If, instead of cold water, cow's milk or coconut milk is added to the fruit, the flavor is greatly improved, and the beverage is appreciated by the average foreigner.

The Sumu living on Rio Patuca are very fond of a beverage made from ripe bananas, which are cooked, mashed, and then allowed to remain for a day or two in a large earthen vessel, until this mass has turned sour. In case the bananas have been only half cooked the drink will be light yellow in color, and it is then known as *pihbra* (*pi* or *pih*, abbreviated from *pihni* "white"). If, on the other hand, the fruits are well cooked the resultant drink will turn dark red, and is then called *wakisa pûni* "red bananas." The Miskito name for either one of these two beverages is *pûnlaya* "red drink."

OIL PALM.—The fruits of the indigenous "hone" or oil palm (*Elaeis melanococca* Gaertn.), called *ohoñ* or *uhuñ* by the Indians, are boiled in order to liberate the red pulp surrounding the seeds. This pulp is then passed through a calabash pierced with holes like a collander and mixed with wabul. This is a most agreeable and nourishing drink, which is prepared only by the Miskito, for the oil palm does not grow inland in the region inhabited by the Sumu. It is the same palm from the seeds of which the Miskito prepare the well-known hair oil, called *batana* on the Mosquito Coast. The drink has been praised by Raveneau de Lussan[59] (438–439) and by M. W. (308), but neither of these two authors mentions it being consumed except together with wabul, as is the case with the Miskito of the lower Rio Coco at least. This beverage appears to be mentioned by Exquemelin (Engl. edit.: 251) under the name *achioc*.

MAIZE.—A number of nourishing drinks are prepared from maize. One of the most common is the one called "pinol" by the Ladinos (M.: *ayuñka;* S.: *am bokol, am tok*). The grain is toasted over a charcoal fire until it begins to "pop"; it is then ground on the metate and kept until needed. For use it is mixed with clear water and sweetened with sirup made from sugarcane, or with wild honey. The drink is cooling and refreshing, but as the maize is not finely ground, the dry particles occasion a tickling sensation in the throat.

On the upper Rio Coco and on Rio Bocay the Indians are very fond of another beverage (M.: *wasplu;* S.: *wasbol*) prepared from maize. The dry grains are ground and cooked afterwards; a small

[59] This author calls it *haon*.

1: Conzemius M-4, 5 (1921) 1932
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quantity of sprouted maize is then added, which imparts a slightly sweetish taste to the drink. It is consumed either fresh or after having been allowed to turn sour. 272

Atol (M.: *aya-makala;* S.: *kuri, am-tunun-ba, ama-tunani-ba*) is a very refreshing beverage which the average foreigner will appreciate. The young or green grains are cut off from the cob with a knife, after which they are passed through a sieve, and the drink is ready. It has great favor among the Ulwa especially. A similar beverage, but inferior in quality, is prepared from old maize; it is called *ulañ* by Miskito and Sumu. If the latter drink is allowed to turn sour it is known as *aya swahni* (M) "sour maize" and *dipis* (S).

Pozol (M.: *pusul;* S.: *sdûa*) is also consumed occasionally, and has apparently been introduced by the Ladinos. This drink is made from the "masa" or paste prepared by treating maize with lye and grinding it upon the metate. It is generally taken unsweetened.

Cacao.—An excellent food drink is prepared from cacao by the Sumu, especially by the Ulwa subtribe. The beans are roasted slightly over a charcoal fire and the outer integument is removed. They are then ground upon the metate together with a large quantity of toasted maize. For use about two teaspoonfuls of the powder and a little sirup are added to a calabash of water and the mixture is agitated for a few moments with the "molinillo." The resulting drink much resembles the chocolate of the Ladinos in consistency and taste, but it is of somewhat gritty character, due to the presence of the ground maize. Sometimes the drink is adulterated with the parched and ground kernels contained in the seeds of the scomphra palm, the pejivalle palm, or the zapote; it may also be flavored with vanilla and cinnamon. M. W. (308) observed this beverage among the Miskito and states that in those days it was sweetened with ripe plantains and wild honey.

Bunya or soured drinks.—These Indians are very fond of consuming vegetables in the shape of a beverage after they have been allowed to turn sour. This is especially the case with cassava, tania, sweetpotatoes, yams, and pejivalles. After being boiled in water, these foodstuffs are mashed; the resulting paste is then wrapped up carefully in large waterproof leaves, tied with rough withes or vegetable fibers, and attached to the rafters of the hut. Bijagua leaves are generally used for this purpose, as they are tougher and not as liable to split as banana or plantain leaves. Such food is known to the Miskito as *bunya*, and to the Sumu as *tapañ*; the Miskito of the interior, however, employ the Sumu name when the ingredients are not cassava. The Sumu also prepare maize in this manner; they cook it and then grind it upon a stone, so that it has the consistency of a thick paste.

Such soured food is always taken along on a journey. If the Indian wants to quench his thirst or hunger he stops at a running stream,

1: Conzemius M-4, 5 (1921) 1932
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272 places a handful of the thick paste in a calabash, and mixes it thoroughly with water. In the case of maize or pejivalles the thick skin is first squeezed out with the hands and thrown away.

INTOXICATING BEVERAGES

273 Bacchanalian orgies play an important part in the semireligious carousals and in the social life of the two tribes under consideration. Fortunately for themselves the Indians seldom have the means to buy spirits at the rum shops and their homemade drinks consume too much of their provisions to be indulged in frequently.

DISTILLING.—The Indians do not appear to have known how to distill, but before the arrival of the Europeans they knew how to get drunk on a number of fermented beverages. Aguardiente or rum (M.: *tahpla;* S.: *tapalni, tapalka,* lit.: "bitter") may be obtained by the Indians in the local shops. In Honduras and Nicaragua the manufacture of this spirit is a government monopoly, which is farmed out to contractors, generally political supporters of the party in power. There are many private illegal stills in the less accessible parts of these republics, which are operated chiefly by Ladinos. Levy (b: 300) states that the Ulwa of Rio Escondido distill an alcoholic liquor from cassava with the aid of an inform earthen still; the latter probably corresponds to the one depicted by Belt (233) from the neighborhood of Santo Domingo (Chontales) at the headwaters of Rio Escondido. I have met a similar simple apparatus among the Paya of Honduras. In these two cases, however, it served for the distilling of sugar-cane juice or brown sugar. Belt (233–234) describes such a "sly grog" manufactory as follows: "It consisted of two of the common earthenware pots of the country, one on the top of the other, the top one having had the bottom taken out and luted to the lower one with clay. This was put on a fire with the fermented liquor. The spirit condensed against the flat bottom of a tin dish that covered the top vessel, and into which cold water was poured, and fell in drops on to a board, that conducted it into a long wooden tube, from which it dropped directly into bottles."

FERMENTED DRINKS.—A great number of fermented drinks are prepared by these Indians. They are known locally by the general name mishla (M.: *misla;*[40] S.: *wasak*); distinctive names are, however, given

[40] This name (*michela, mishlaw, mushelaw*) appears to have been formerly restricted by the Miskito of Cabo Gracias a Dios to a beverage prepared from ripe bananas or plantains, either boiled or roasted (Exquemelin, French ed.: II, 268; Dampier: I, 314; M. W.: 307). Lionel Wafer (A new Voyage and Description of the Isthmus of Panama, London, 1699, pp. 154–155) gives the name *mislaw* for an unfermented beverage prepared from ripe plantains. None of these seventeenth century authors mention the use of cassava for this purpose, although they list it among the food plants of the Miskito.

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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The most important fruit plant of the Miskito is the banana *(siksa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(duswa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(twas)*, avocados or alligator pears *(sikya)*, soursops *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.

1: Conzemius M-4, 5 (1921) 1932
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to the beverages made from maize. They are all prepared on identical lines, the ingredients only differing in each case. These various drinks are stored in large earthenware vessels or in casks of foreign manufacture; the Miskito of the seventeenth century also used canoes for this purpose, as do the Paya of to-day (Dampier: I, 10). 273

(a) CASSAVA.—Among the Miskito and some of the Sumu the most important of these beverages is the one made from sweet cassava (*Manihot palmata* Muell.); its preparation does not differ essentially from that of *kava* or *kawa* among the Polynesians. The root is first peeled and cooked, then mashed or merely cut in small pieces, and finally thrown into a cask or a large earthenware vessel (M.: *sumi;* S.: *suba, sau suba*). Hot water is added and the whole is then covered with large leaves, the heat causing it to ferment. A small quantity of the root is chewed by the women, until thoroughly saturated with saliva, and then spat out again in the vessel in order to activate fermentation. The latter process may also be accelerated by the addition of sugar-cane juice and even by drum beating. From time to time the mass is stirred and skimmed with the aid of a paddle-shaped thin stick, for it effervesces like must. Fermentation will be complete in two or three days. The beverage looks much like buttermilk, but it is sourish in taste. Its toxic power is not very great, but the Indian consumes such a large quantity that he finally falls down on the ground, completely drunk.

(b) OTHER VEGETABLES AND FRUITS.—The above receipt may also be used with sweetpotatoes, yams, tania, or eddoe, and the fruits of the pejivalle plam and the breadnut tree.

The fruits of the cashew and other trees, as bananas and plantains, are merely bruised, with the addition of water, allowing the juice to take its own time to ferment. The most potent drink is the one prepared from roasted pineapples, which has been mentioned already during the second half of the seventeenth century by Dampier (I, 10) and M. W. (308). Sugar-cane juice may be added to these various beverages in order to augment their potency.

Pure fermented sugar-cane juice is extensively consumed in certain regions, especially by the Indians living on Rio Patuca. The juice is merely squeesed out with the aid of a simple hand mill, and fermentation may be assisted by adding to the liquid a small quantity of a leguminous vine (M.: *snak, snik;* S.: *sinak*), which bears small bean-like pods.

(c) MAIZE.—Among the Sumu maize (*Zea mays* L.) takes the place of cassava as the chief ingredient for the favorite alcoholic drink. The Sumu and the Miskito of the interior make a number of beverages from this grain. The most potent of them is called *puput* by the Twahka and Panamaka and *sili* by the Ulwa, but it is unknown to the Miskito; it is reserved for the great festivals, such as the *sau*

1: Conzemius M-4, 5 (1921) 1932
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●273 and the *aeañ-lawwana*. Dry maize is ground on the metate, wrapped in large leaves after the manner of the "tamales" of the Ladinos, and thus cooked in boiling water. It is then kept for weeks or months over the smoke of the fire, whereby it becomes covered with a grayish mold, which ac[illegible] for its name (*puput* "gray").[405] A few days previous to the [illegible]tion of the feast the mass is taken out of the leaves, crumbled [illegible] cooked with a small quantity of water; it is then poured in a hole made in the ground over which a provisional shed has been erected. A thick layer of bijagua leaves or of balsa bark prevents the beverage from coming in contact with the ground. In two or three days fermentation will be completed and then the drink is ready for the palate. Before being served this potent liquor is strained and mixed with water.

Another intoxicating drink (T., P.: *mahkrus;* U.: *labapi tuhdey*) is made as follows: Either dry or green maize is ground on the stone, wrapped in leaves and boiled in water. Afterwards when this mass has cooled off a little, it is chewed by the women, and then left to ferment. From sprouted Indian corn a similar drink (M.: *aya urwan;* T.: *am wus;* P.: *ama wus;* U.: *am patañ*) is prepared, but it is not chewed nor wrapped in leaves. Among these Indians the latter drink is also sometimes known by the general Spanish name chicha (*sitsa*).

(d) PALM WINE.—Occasionally the sap from various species of palms, as the coyol (*Acrocomia vinifera* Oerst.) and the cohune or corozo (*Attalea cohune*), is left to ferment. The tree is felled and a concavity is cut into the stem, just below the crown of leaves. In about half an hour's time the sap will be found collecting in the hole, scarcely any of it running out at the butt, where the palm has been cut off. The sap may be taken fresh, but it is generally allowed to ferment, which process will be completed in two or three days. This "wine" is of a clear yellowish color.

(e) OTHER FERMENTED DRINKS.—Exquemelin (Engl. ed.: 251) gives the name *achioc* to the most common fermented beverage of the Miskito of the seventeenth century, which he describes as follows: "It was made from a palm seed, bruised, and afterwards steeped or infused in hot water, till it be settled at the bottom. This liquor being strained had a very pleasant taste, and is very nourishing." The seeds referred to are probably those of the oil palm from which a nonfermented drink is prepared to-day. (See Nonfermented Beverages.)

Levy (b: 300) states that the Ulwa of Rio Escondido also prepared fermented beverages from the tender annatto seeds and from

[405] Crévaux (Voyage dans l'Amérique du Sud, Paris, 1883, pp. 405–406) gives the receipt for a maize drink from the Guianas which is prepared on identical lines.

1: Conzemius M-4, 5 (1921) 1932
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the pulp surrounding the wild cacao (*Theobroma bicolor* ?). This same writer (b: 308) likewise mentions a drink made from coconuts; it was sweetened by the addition of ripe plantains or wild honey. 273

GOVERNMENT AND SOCIAL ORGANIZATION

There is no trace of any division in clans or exogamic kinship groups. The tribal organization of these primitive tribes was essentially along democratic lines. 621

In former days the Miskito do not appear to have been ruled by a supreme chief, except during war time, when a commander was chosen by an assembly of the old men, in order to direct the military operations (M. W.: 307). The choice fell generally upon a warrior celebrated for his prowess. According to Exquemelin (French edit.: II, 264) preference was given to an Indian who had accompanied the buccaneers, but with the restoration of peace his authority ceased. 624

In the legends of the Miskito there are records of individuals seizing the powers of government by violence. The insignia peculiar to a chieftainship seemed to consist of a wooden scepter and of a metal breastplate depending from the neck. The powers of the numerous priest-doctors (*sukya*) were also very great, but it is not known just how much they intervened in governmental affairs. It appears, however, that occasionally the temporal and spiritual heads were both centered in the same person. 632 554

Hereditary chiefs did not rule the Mosquito Coast until after the establishment of British influence. One of these chiefs, a Miskito, was later raised to the rank of king; he became a tool in the hands of his foreign protectors, with whose aid his nominal authority was extended over the larger part of the coast. A silver crown and a scepter of little intrinsic value were bestowed upon him by the British authorities of Jamaica. The rule of the Miskito "king" was absolutely despotic. His orders were carried out by his quartermasters (*kwatmas*); the latter carried a cane or staff, which symbol of authority was apparently introduced by the English or Spaniards. A silver medal, sword, or anything else known to belong to the king would also do. Such a token established the credibility of the bearer and an immediate compliance with his orders. Foreign traders also applied to the king for such an object which served as a passport; every Indian was compelled to render him assistance, lodge him, sell him food, and furnish him with the means of continuing his journey, against reasonable pay. That the Indians of the interior did not pay much attention to such commands need hardly be told. 643 648

Besides the king, there were three other important rulers among the Miskito, who governed comparatively large areas and were known as "general," "governor," and "admiral." Numerous minor 624

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, 226
the latter being taken in the lagoons and at sea. Harpoons with long 225
retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are 231
now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. 252
Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plan- 272
tains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs 273
(*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat 251
is dried on a three-legged bubracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. [621]
Sumo villages appear to have been much smaller. Formerly, communal 342
houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

3: Pijoan D-5 (ca. 1945) 1946
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252 Meat and fish are either boiled in water or roasted in hot ashes.
262 The favorite meats are red monkey and white lipped peccary. Birds eggs are eaten, even if partially rotten but the eggs of domestic fowls are seldom used. Bananas are cooked in many ways depending to a great extent on the degree of ripeness. Fish are wrapped in bajagua leaves and roasted or fried in coconut oil.

Vegetables such as cassava, sweet potatoes, tania, yaws, green bananas and plantains are either boiled in water or placed with the meat for roasting. The pith or "cabbage" or various palms are also cooked and eaten and other wild fruits are used raw when in season A sort of bread is made from time to time by grinding dry maize in a metate and adding water. The mixture is then wrapped in bijagua leaves and allowed to stand for several days during which time it ferments. It is then baked in embers.

A sort of ensilage called *bisbaya* is made by the Indians and consists chiefly of green bananas, plantains, and pejivales. These are peeled and buried in the ground, covered layer by layer with bijagua leaves and the ensilage is not uncovered until required for food. The fruit retains its whitish natural color and turns black only after exposure to air. These food supply units have been known to last for years. Bisbaya may be consumed as a beverage after being toiled with water or it may be baked in leaves as a sort or bread. The fruit of the pejivalle palm is treated in a similar manner.

252 Various species of pungent small wild peppers are used with food
263 as a seasoning. The peppers are mashed with lime juice and little salt to make a sauce which is stored in containers and used at meals to replace salt. Besides the use of peppersauce the ashes of burned palms are often used to replace salt and in fact have a high salty flavor. Vanilla is used to flavor a drink prepared from cacao and maize.

262 The eating of earth and charcoal (geophagia) is common among women and children and the exact physiological effect is unknown. Milk from domestic cows is common and is usually consumed as it sours or converted into a cheese.

The Indians are fond of foods that have soured or spoiled a little
[273] and often allow many decoctions to ferment; distilled liquors, however, are unknown.

221 *Seasonal intake of foods.* Meat, fish, fowl, cheese and milk are con-
262 sumed daily throughout the entire year but consumption of vegetables and fruits is seasonal.

January	*Aladi cati, Inupu cati:* bastard cedar flowering time. Citrus fruits in quantity, avocadoes, melons, nuts.

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tubuñ;* S.: *wahluluñ, suñsuñ, wahamtari*). 222

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer. 251

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [272] [252] [a]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul. [272]

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tahra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukya uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them. 276

[a] Bell (b: 37) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

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276 Still, it is not certain that tobacco was known to these two tribes in pre-Columbian days. Their names for the plant (M.: *twako;* S.: *aka*) point toward its introduction by the Europeans. The Indian tribes living on the Pacific side of Nicaragua at the time of the discovery knew tobacco, however, and they smoked it in the form of cigars. Our name "tobacco" comes from the word *tabaco*, which the Indians of Haiti applied to a sort of pipe. This instrument consisted of a small wooden tube, shaped like a Y; the two points of it were inserted into the nose, while the other extremity was held in the smoke of burning tobacco, and thus the fumes were inhaled.

[439] At the present time the plant is not cultivated by the Indians under consideration. Leaf tobacco is imported from the United States, and this foreign product is preferred to the one raised in Central America. Among the Sumu smoking is confined principally to the men, but this practice is common enough among Miskito women and children. The leaf is smoked chiefly in pipes (M.: *twako mina;* S.: *aka pan, aka pana*), which are made locally of clay, wood, or maize cobs; imported clay pipes are also bought in the shops. According to Wickham (c: 206), the Ulwa of Rio Escondido do not smoke the pipe, but use the leaf rolled roughly in cigar form made on European models. Very few chew tobacco, while the habit of snuffing is entirely unknown. Among the females the pipe is frequently passed round, each one of the women present taking a few puffs and then passing the pipe to her neighbor. A supply of tobacco is a readily accepted currency for the acquisition of food in the more primitive parts of the country. For small favors the traveler is also expected to give one or more tobacco leaves in exchange.

263 CAYENNE OR RED PEPPER.—Various species of very pungent, small red peppers (M.: *kuma;* S.: *anmak, añmak*), growing in a semiwild state on perennial shrubs (*Capsicum frutescens* L. and *C. baccatum* L.), are used with food as a stimulant and as an excitant. They were found in the Miskito kitchen during the times of Dampier (I, 9).

The Miskito usually prepare a "sauce" (M.: *kuma laya;* S.: *añmak wasni, añmak waska*) with these peppers, which they mash and then add some lime juice and salt. They store it in bottles and pour a small quantity of the liquid on their food while eating. The Sumu, on the other hand, grind the red peppers on the metate together with coarse salt. Upon serving the meal the women place a little of this mixture on a large leaf, and every one seasons his own food. These peppers may also replace salt entirely. The large "sweet" chilies (*Capsicum annuum* L.), which grow on annual plants, are also occasionally planted and eaten as a vegetable.

1: Conzemius M-4, 5 (1921) 1932
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263 or 1668 among the Indians (Sumu or Paya) living around Rio Guampú in Honduras.[88]

VANILLA.—Sloane (a: p. LXXVIII) gives an account of the method practiced by the Miskito in curing vanilla (*Vanilla planifolia;* M. and S.: *diti bfinia*). The present-day writer has not observed that the Indians make any use of the pods, except in flavoring a drink prepared from cacao and maize.

249 ANNATTO.—Annatto (M.: *dûlala, tmariñ;* S.: *aval*) is cultivated
263 chiefly for the face pigments furnished by the red coloring matter
177 surrounding the seeds; it is not used as a condiment, except in isolated cases, where this habit has been introduced by the Ladinos.

252 COOKING OILS.—The kernels contained in the seeds of various palms are made into oil, which is occasionally used in the kitchen. The most important one is that extracted from coconuts. The nut is grated and then boiled, the oil being skimmed off as it rises to the top. The seeds of the corozo (*Attalea* sp.), hone or oil palm (*Elaeis melanococca* Gaertn.), huiscoyol (*Bactris horrida* Oerst.), and the kahka palm are also opened occasionally to extract oil from the kernel. Cooking oil is also furnished by the red fruits of a forest tree (M.: *yari;* S.: *yara*), and by a small shrub called *wari-klua* by the Miskito.

263 SWEETENING FOOD AND DRINK.—Previous to the introduction of sugar-cane the Indians had to rely upon ripe bananas or plantains and wild honey to sweeten certain food beverages. Now sugar-cane juice is boiled into sirup or brown sugar. As soon as the juice has been squeezed out it is poured into a large pot on the fire; as the heating progresses a scum arises which is skimmed off with the aid of a calabash shell pierced with holes and attached to a long stick. When sufficiently thick the brown liquid is poured into bottles and kept until needed. For the making of sugar the juice has to be boiled somewhat longer; finally it is poured into wooden molds where it crystallizes.

VARIOUS.—The round berries of the allspice tree (*Pimenta officinalis*), which grows wild in the forest, are gathered, dried in the sun, and used to flavor certain beverages.

Black pepper and cinnamon have also been introduced into the native kitchen; both of these commodities are bought in the local shops.

276 The chewing of coca, which was a current habit among the Nicarao of the Pacific coast of Nicaragua at the time of the conquest, appears to have been unknown on the Mosquito Coast.

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[88] "Hacen sal de unos árboles que hay en aquellas montañas, a manera de coyol o coco; rajan este árbol, hasendo astillas, quemanlo, hacen ceniza, hacen de ella legía; esta en una olla grande la echan, sola la legía sin la ceniza, y a fuego manso la van calentando hasta que se convierta en sal; es muy blanca, pero no tan fuerte como la que usamos." (Serrano y Sanz: 368.)

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227 fish on that spot; the presence of the latter is indicated to him from certain movements on the surface of the water. Lead balls or small round pebbles are attached to the edges of the net in order to keep it down in the water.

226 BOW AND ARROW.—Several river fishes, especially the short, deep, bluish-purple, perchlike species, which is known locally by the Miskito name *tuba* (S.: *pahwa*, *pahawa*, *pâu*), are generally killed with bow and arrow. (See Hunting and Fighting Implements.) Two allied fishes, the moga (M. and S.: *moḃa*) and the guapote (M.: *sahsiñ;* S.: *musa*), are also killed in this manner.

The fishermen will sit entire hours at the waterside, keeping up continually a low, plaintive whistling, which is said to entice the fish within arrow shot. This requires great patience, a quality of which the Indian is not lacking, especially when it comes to hunting and fishing. The point of the arrow is held sometimes a foot deep in the water. At the approach of a fish the arrow goes off quick as lightning, and it rarely misses the mark. On account of its feather-light shaft it returns again to the surface and the fish is easily seized. This exercise is extremely difficult, as the true position of the fish is not the one in which it appears to sight, but it varies with the distance of the fish, with the latter's depth in the water, and upon the reflection of the light. In case the fisherman misses the arrow will return to the surface with the same degree as it had been shot down.

FISH "POISONING."—Fish are also caught by "poisoning" the water of small creeks. For this purpose the Indians utilize several vines, [278] especially *Seriania inebrians* (M.: *basala;* T., P.: *wana;* U.: *wahnari*); in Central America all of these varieties are known by the Quichua name "barbasco" or the Aztec "amol" (amolli). The vine is crushed with flat stones or wooden clubs, in order to release the poisonous milky juice. At a narrow part the creek has been barred by a sort of weir or fence made of sticks, stones, or branches in the form of an angle with the point in the middle of the stream. At some distance above this spot the crushed plant is thrown in the water, and the poisonous juice will spread and stupefy all the fish in the neighborhood. The latter then float on the surface and are carried down the stream, but they are intercepted by the weir, where they are caught by the Indians standing in the water and thrown on land. Larger fishes, which are not entirely powerless, are easily harpooned in this condition. By this method enormous quantities of fish may be obtained in a short time. The smaller fishes are allowed to float away and recover in the unadulterated water below. The juice of the "barbasco" is also poisonous to man, but it does not affect the taste of fish killed or stupefied with it. This manner of fishing is widespread in both Americas.

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *triau*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

1: Conzemius M-4, 5 (1921) 1932
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411 language, and gives this name also as that of an island among the
●278 Mosquito Keys.

The secretions from an indigenous pale greenish-blue frog (*Dendrobates tinctorius*) may also have been used as an arrow poison, as
171 is done by several tribes of Colombia.

411 LANCES AND SPEARS.—Lances and spears, tipped with fishbones or with flint, were formerly used for hunting and fighting, but to-day they are employed exclusively in fishing. (See Fishing and Fishing Implements.) Ferdinand Columbus mentions these weapons and says that they were made of palm wood, black as coal and hard as horn, and pointed with the bones of fishes. The javelin or throwing spear is evidently the weapon mentioned in old Spanish documents under the name of "vara para tirar." According to Exquemelin (Engl. edit.: 114) lances of a fathom and a half in length and tipped with a crocodile tooth were one of the principal arms of the aborigines of the Corn Islands.

SLINGS.—Small slings (M.: *prâuprâukya*) for throwing stones are sometimes employed to kill birds.

CLUBS.—Wooden clubs (M.: *dyara prukaya;* T.: *di bâunin;* U.: *dibâunaka*) jagged with alligator teeth constituted a dangerous weapon in former days, but they disappeared many years ago.

BOW AND ARROW.—Bow and arrow appear to have been the principal weapon of the tribes under consideration; still they are said to have been unknown to the natives of the Corn Islands, who apparently belonged to the Kukra, a subtribe of the Sumu (Exquemelin, Engl. edit.: 114). It is known, however, that the Kukra living on the shores of Bluefields Lagoon possessed arrows, and a description thereof has been left to us by the same author, Exquemelin, whose vessel anchored at that lagoon in 1671. One morning several women slaves from this buccaneer vessel were attacked by a group of Indians and pierced by a great number of arrows. The latter were made of palm wood, 8 feet in length (5 to 6 feet according to the French edition), round in section and of the thickness of a thumb. They were tipped with sharp points of flint which were tied firmly into the arrow together with a wooden hook, so that the arrow point presented a harpoonlike appearance; the other extremity ended in a point. Other arrows had at the distal end a small wooden box, 1 foot long, filled with round pebbles, evidently in order to increase the power of the arrow. The Indians had been careful enough to put some leaves in this box in order to reduce the noise produced by the pebbles upon shooting the arrow off. Some of these arrows were painted red (Exquemelin, Engl. edit.: 247–248; Span. edit.: 446; French edit.: II, 257–258).

1: Conzemius M-4, 5 (1921) 1932
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last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

SNAKE BITES.—Guaco (*Mikania* sp.) is one of the various plants used as an antidote to the virulence of snake bites, not only by the Indians but by the Ladinos and Creoles as well. In order to neutralize the venom, the sukya also administers an infusion prepared from the bark and leaves of a leguminous shrub or small tree, called *daka*, while the *brum sirpi* weed is applied externally. The patient must abstain from eating food of which snakes are supposed to be fond. A woman *enciente* must under no condition be seen by the patient, otherwise the latter will die.

BUSH MEDICINES.—The Indians know a great number of bush medicines (M.: *sika;* T. and P.: *panbas, panabas;* U.: *dibasta*) for external or internal use. Many native plants and trees are employed, the bark, roots, leaves, and seeds being utilized. The white, delicious resin of the copal or incense tree (*Protium* sp.), copaiba balsa (*Copaifera officinalis* L.), Peru balsam (*Myrozylon pereirae* Klotzsch syn. *Toluifera pereirae* Baill.; M. and S.: *bakus*), the gum of the locust tree (*Hymenaea courbaril* L.; M.: *lâùa, laka;* S.: *tipi*), ipecacuanha (*Uragoga ipecacuanha* or *Polygala costaricensis*), sarsaparilla (*Smilax officinalis*), and unguents prepared from the oils extracted from the seeds of various trees are employed in the treatment of certain infections and sores.

The yellow milk of a small tree, known locally as "samboo gum" or "leche baría" (M.: *samu;* S.: *pûmaba*), is applied in poultices for rheumatism; it is also said to cure the *bulpis* skin disease, when the latter is still in its first stage.

The seeds of the piñon (*Jatropha curcas* L.; M. and S.: *pisik*) and the antidote bean (*Fevillea cordifolia* L.; M.: *mukula;* S.: *mula*) are administered as an emetic and as a purgative. The medicinal properties of the castor-oil plant (*Ricinus communis* L.; S.: *unapalan*), which grows wild on the river banks, are well known. De Candolle, however, believes this plant to be of Old World origin; curiously enough, the Miskito have no native name for it.

Toothache is cured with the milk of the cachito tree (*Tabernaemontana donnell-smithii* Rose; M.: *bukss mahôra;* S.: *wako*); the latter is also used for skin troubles.

An ill-smelling herb reaching about a foot in height and known as fit weed (*Eryngium* sp.; M. and S.: *kisdiri*) is used for snake bites and epileptic fits. The Ladinos call it "culantro" (coriander) and use it as a condiment, but it must not be confounded with the true coriander (*Coriandrum sativum* L.), which is cultivated sometimes in Central American gardens under the name "culantro de Castilla."

The roots of the cerrón cantil or baraja (M.: *sus sdika;* S.: *tata, daka, tisliñ*) enter into remedies for venereal diseases. The bitter-

1: Conzemius M-4, 5 (1921) 1932
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wood or hombre grande (S.: *wanabaka*) is said to be efficacious in case of snake bites. 278

The woody rootstock of the China root or cuculmeca, a sort of French brier (S.: *samalâi*, *wasalanaka*) is boiled in water and the decoction is used to clean the blood, and as a preventive against snake bites.

The small "beans" contained in the pod of the pissabed or frijolillo shrub (M.: *siñsiñnya*) are toasted, ground, and used as coffee on account of their diuretic properties; the root of this plant is employed in malarial fever.

The large round leaves of the cowfoot or Santa Maria bush (M.: *sikatara;* S.: *kalamata*) enter into poultices for a swelling of the flesh, while spider webs are applied to wounds in order to stop bleeding. Wild honey is also used in medicine.

PRESUMED CAUSE OF DISEASES.—The cure of the sick is practically always left to the sukya; the latter is generally a clever herbalist, and the treatment applied by him is often excellent, but the remedy in itself is considered of no avail unless certain rites are observed by the healer as well as by the patient. 756

According to these primitive people, indigenous diseases and accidents are always due to the agency of some evil spirit (M.: *lasa;* T., P.: *walasa;* U.: *nawal*) under whose power the sick person is supposed to be. The mischief-maker may send a snake or a jaguar to harm the intended victim, or cause a tree to fall upon him, or cause his canoe to upset, or bring about some other calamity and ill luck. Thus toothache is supposed to be caused by a worm (M.: *sûkri, sisi*) that has been sent by these evil powers to bore the tooth. People walking in their sleep are said to be possessed by demons. Epilepsy is also caused by the temporary possession of the individual by such evil spirits; hence fits are called by the Miskito *wlasa prukaya* "to be beaten by the devil." For the cure of this disease a decoction prepared from the *kisauri* herb is said to be very efficacious. 753

This evil influence may be counteracted through the agency of the sukya who manages to exorcise the spirit from the sick and then brings about a complete cure.

DIAGNOSIS.—Through the use of narcotics, especially the excessive use of tobacco, the sukya throws himself in a condition of wild ecstasy, and goes into trances and hypnotic states. During such an abnormal condition he is supposed to be in relation with friendly spirits whom he had invoked previously, and who reveal to him the source of the illness and the mode of cure. 756

HEALER'S INSIGNIA.—The insignia or kickshaws of a sukya during a cure are three or four black hardwood sticks with carved heads and several magic stones and dolls or manikins of white tunu cloth. Stone axes, which are regarded as thunderbolts, figure also among the

1: Conzemius M-4, 5 (1921) 1932
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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kaswe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78]

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kati ñi-skura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu ñi-skura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers.

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sdika*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless.

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontín" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast.

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects.

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1920, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

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278 Camotillo is the Spanish name for a tuberous plant, said to be not unlike the sweetpotato vine. It is supposed to grow in a wild state in certain regions of the Mosquito Coast, in the neighborhood of the rivers, but it is known only to few persons. The tuber is dried in the sun and reduced to a fine powder by a very laborious process. After pulverization it is introduced into the food or drink of the intended victim. Death will set in after exactly as many days as the tuber in question had been extracted from the soil at the time of administration.

The Ladinos believe that many Miskito and Sumu are acquainted with this manner of disposing of an enemy, but I was unable to obtain from these Indians any reliable details pertaining to the plant. All my Indian informants denied knowing it. In 1919 the candidates for president and vice president of Honduras died several months previous to the election, and the ignorant people of that Republic ascribed their deaths to the administration of camotillo by adherents of the rival political party.

753 WITCH POISON.—Many Indians believe that poison can be wafted through the air to the intended victim. The fear of "buried poison" 754 has been introduced among the Miskito by Negroes from British Honduras and Jamaica, who have settled at the coast. In fact the Miskito of Rio Coco and Honduras nowadays ascribe disease not so much to the mischief of evil spirits as to the presence of buried poison in the neighborhood of the sick person's house. This poison is supposed to have been hidden there by one of his enemies with the object of causing him to fall into some lingering disease, as dysentery, and eventually to die. Such poison, which is generally inclosed in a bottle, is said to soak through the cork, spread to the surface, and then cause disease to all the people in the neighborhood.

755 When after the administration of different remedies there is no improvement in the condition of a sick person, a "poison doctor," that is, a sukya skilled in the discovery of such witch poison, is called. The latter, upon his arrival, takes a little walk around the house, and then pretends to smell buried poison in the neighborhood. He promises to take it out if everyone in the settlement will give him a small amount of money. As the presumed bad effects of such buried poison will gradually spread to the whole village, everyone will pay his share, and the following day the sorcerer promises to do the needful. In the meantime, generally during the night, he buries a small flask of a dark liquid near the house of the sick person. In the morning the entire population of the village is present in order to witness the extraction of the source of the illness. After searching the vicinity of the house for a considerable time the sukya finally walks to the spot where he buried the small bottle during the night, and then triumphantly shouts: *Nara sa* "Here it is." He shows the

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him.

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements.

COURTSHIP.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yamni kâikaya sâika;* T.: *yamni talnin pananbas;* U.: *yamka talnaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *misbara kâikaya sâika;* T.: *ba talnin pananbas;* P.: *ma iwihni talanin pananibas;* U.: *di dutka talnaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of

2: Kirchhoff E-4 (no date) 1948
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Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulua*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

AMERICAN ORIGIN:

- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Eddoe (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Bean (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Pataste.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Usi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

FOREIGN ORIGIN:

- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

Fishing.—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

2: Kirchhoff E-4 (no date) 1948
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same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

A shaman may also prophesy the future or determine the route hunters should take in order to find game. By conjuring, a shaman may cause harm to come to people. A shaman may be retained by a person to eliminate an enemy.

3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kaka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

3: Pijoan D-5 (ca. 1945) 1946
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759 rendering health service to this situation. Physicians, in general, find the territory unremunerative and as a consequence cannot be induced to venture or remain in that region. We are therefore confronted with the problem of adapting our method to the situation even though the procedure introduced may not be ideal.

For this reason Dr. Thaeler at Bilwas Karma has trained young men to act as agents for the central clinic. The men arrive at Bilwas Karma and undergo a serious series of lectures and demonstrations, then a period of internship and are forthwith prepared to carry out limited medical activities in the communities from whence they came. In this process of adaptation it is important that the trainee return to his original community, for his people know him, place trust in him, and adaption to a porgram is simplified. Furthermore the trainee is at ease with his own people, his prestige is increased and his relatives offer odequate security for his success.

164 759 The diseases in which an empirical diagnosis can be made with a medicum of success are as follows: malaria; yaws; pinta; acute dysentery (presumably bacillary); chronic weaking dysentery; (presumably protozoal or helminthic); helminthes; and skin infections. The trainee is taught mainly in terms of these major diseases, first aid and rudimentary principles of child-bearing and pediatrics are secondary. The system ordinarily employed by the Indians in first aid is not to be condemned, obstetrics and pediatrics do not constitute subjects of sufficient public health importance to this region. The trainee is taught insect control measures and the use of certain speciific drugs for the diseases just described. His medical supplies consist chiefly 278 of atabrine, oil of chenopodium, magnesium sulfate, sulfaquanidine, vioform, carbarsone, antiseptics, gentian violet pills, a few miscellaneous drugs such as aspirin and some first aid equipment. The trainee is taught to send many of the patients whom he regards as special cases to the hospital. There is a possibility that such a system may 000 succeed, particularily if the trainee or agent is brought back to Bilwas for refresher courses. The merits of the system result from one basic fact and that is that Dr. Thaeler is a well trained clinician with considerable understanding of these Indians. It seems highly important that such a program be directed only by a well qualified physician or physicians who have had special training in medicine as applied to societies of varying cultural traits. This fact has been recognised to some extent by the British in their various schools of tropical or colonial medicine and by the United Fruit Company. In other instances tropical medicine may be academically isolated from the societies who should receive the results. The mistakes made by young physicians,

1: Conzemius M-4, 5 (1921) 1932
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OTHER HANDICRAFTS

283 BAST FIBERS.—From various trees known locally as "mahoe" or "majagua" (M. and S.: *sani*, *wakpi*, *wakmatis*, *tõitu*) the Indians obtain strong bark fiber (M.: *sani;* S.: *wahee*). The best fiber from these trees is pulled off, split, cut into many threads of the desired size and made into ropes and cordage, hammocks (M.: *silmika;* S.: *wuk*), matates or carrying bags (M.: *kũa;* T., P.: *wili;* U.: *wali*). These articles are colored with native bark dyes. The carrying bags are of various sizes and consist of coiled work without foundation; they are furnished with a head strap woven of one piece with the bag.

Bast fiber is also the common tying material of the Indians, and a supply thereof may always be found in the huts. It is also used as pack straps, which are put around the forehead and support the load carried on the back.

PITA FIBER.—Pita or silk-grass fiber (M.: *kuru;* S.: *awa*) is employed for similar uses as bast fiber, and the articles made from it are practically indestructible. It is also made into fishlines, fish nets, and bowstrings, and used to repair shoes. Its extraction is very laborious. The pulpy covering surrounding the fibers is removed by scraping the surface of the leaf on a flat board with the aid of a machete or heavy iron knife. The fibers, which are thereby exposed, are then loosened and easily pulled from their bed by rubbing them crosswise of the leaf with the leaf pressed down upon the flat board. They are then washed to remove any adhesive pulp, dried, and rolled on the thigh into twine.

285 BASKETRY.—Basketry is not highly developed, although in such a well-watered country as the Mosquito Coast there is no lack of palms, vines, creepers, and epiphytic plants which may be used in basketwork. Certain vines are used in tying material, especially in the construction of the dwellings. The carrying bag of bark fiber or pita fiber takes to a large extent the place of baskets. From *wari* withes is made a round basket (M. and S.: *ulun*, *usnuk*), which is used to store calabashes and other small kitchen utensils. Other types made by the Sumu are called by these Indians *wak-tdina* and *sidan*. A large waterproof basket, known locally by the name *patáki*, is obtained in trade from the Black Carib; it is made from *sisin* withes.

● 281 177 LEATHER WORK.—The art of tanning has apparently been learned from the whites. The bark of numerous indigenous trees is used by the Indians for tanning purposes. Leather is used nowadays for drumheads, masquerade dresses, sandals, moccasins, crude saddles, and belts.

383 RUBBER INDUSTRY.—Some of the Indians have learned the process of hardening the milk of the rubber tree (*Castilla* sp.) by treating

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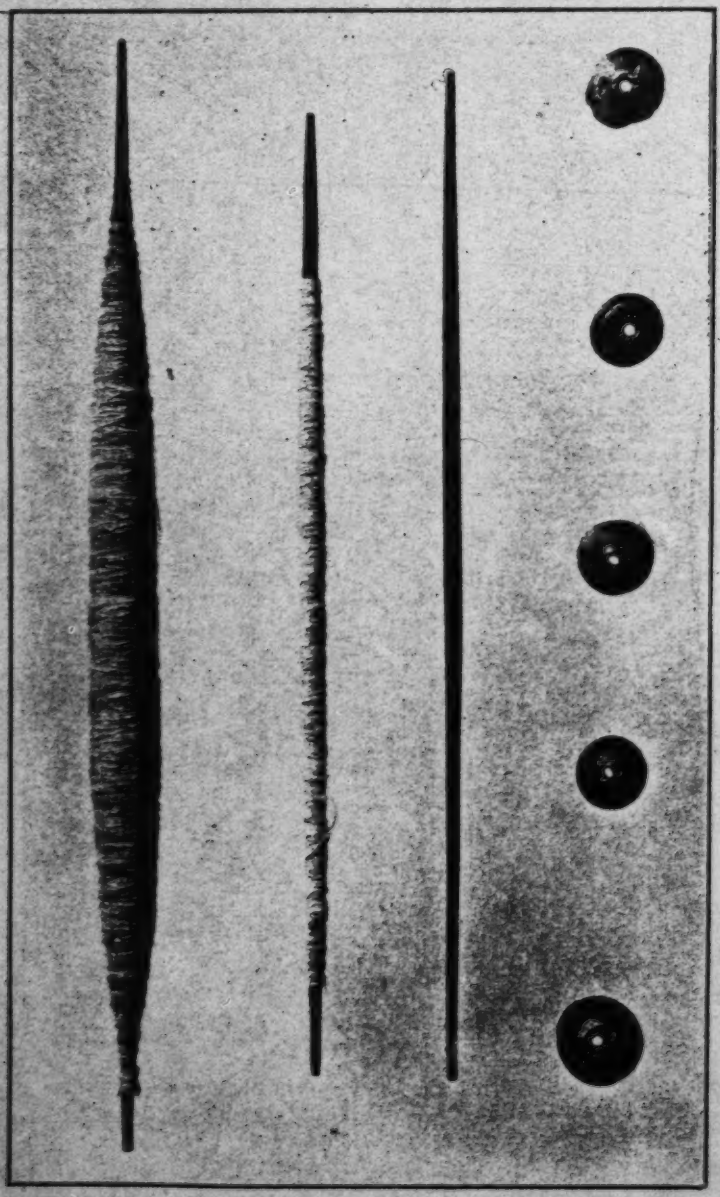

SPINDLES AND SPINDLE WHORLS
Banks of Rio Benny and Rio Waupuk.

[p. 50 C]

1: Conzemius M-4, 5 (1921) 1932
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sashes (M.: *yalasawa;* S.: *bamaksitna*), hammocks (M.: *silmika;* S.: *wak*), and into shot bags or hunter's bags (M. and S.: *malipuk*). The long sleeveless garment, called *wipal* by the Miskito and *kiškura* by the Sumu, is not made any longer. All these cotton textiles, although coarse in texture, are soft to the touch. They are of excellent quality and the patterns are always inwoven. Sometimes a fringe of the white down of the muscovy duck extends all round the selvage. According to Exquemelin (Engl. edit.: 251) bed sheets were also made of cotton in former days by the Miskito.

SPINDLE.—The spindle (M.: *blakat;* S.: *malkat, malakat*)[a] consists of a shank made from the hard wood of the pejivalle palm. It measures from 1 to 1½ feet in length and tapers to a point on both ends. The whorl or fly is inserted at about 2 inches from the lower extremity, and the whole presents the appearance of a gigantic top. The whorl is usually made of a rare, very hard and heavy marblelike rock, which occurs in different colors and is called *kupa* by the Indians. Turtle or tortoise shell, manatee bone, clay seeds, and even heavy wood are also employed occasionally for this purpose. The shape of the whorl varies considerably; most commonly it is of conical form. The largest diameter varies from 1 to 1½ inches, and the height from three-quarters of an inch to 1 inch.

SPINNING.—A very curious method is used to spin (M.: *blakaya, bitikaya;* T. and P.: *wišnin, wišnini;* U.: *tišhnaka*). A cotton thread, drawn by the left hand of the operator from a pile which she is holding in her lap, is attached to the spindle a little above the whorl. The spindle is placed in a calabash and is made to revolve very rapidly by means of the thumb and forefinger of the right hand. With each twirling movement the spindle is kept in rotation for about half a minute by the momentum of the whorl, during which time the operator is continually drawing out cotton thread, which is then wound on the spindle. This process is repeated until the spindle is full.

WEAVING.—The cotton thread is woven (M.: *lukaya;* T.: *kilnin;* P.: *enini;* U.: *daknaka*) on a horizontal loom (M.: *slabin;* S.: *slabin, silamka*) of most simple construction and similar to the one shown on the Mexican Codices, and still used by the Maya and other Central American tribes. It consists of a cloth beam and a yarn beam, which are connected to each other by the warp. The yarn beam is attached to a house post, about 6 feet from the ground, while the cloth beam is attached round the back of the weaver by a thick cord, enabling her to tighten the warp at will by merely leaning backward. The completed material is rolled up at the lower end. Looms of similar technique are also found in South America and Oceania.

[a] Cf. Mexican malacatl.

1: Conzemius M-4, 5 (1921) 1932
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OTHER HANDICRAFTS

283 BARK FIBERS.—From various trees known locally as "mahoe" or "majagua" (M. and S.: *sani*, *wahpi*, *wahmatis*, *tâitu*) the Indians obtain strong bark fiber (M.: *sani;* S.: *wahso*). The best fiber from these trees is pulled off, split, cut into many threads of the desired size and made into ropes and cordage, hammocks (M.: *silmika;* S.: *wah*), matates or carrying bags (M.: *kũa;* T., P.: *wili;* U.: *wali*). These articles are colored with native bark dyes. The carrying bags are of various sizes and consist of coiled work without foundation; they are furnished with a head strap woven of one piece with the bag.

Bast fiber is also the common tying material of the Indians, and a supply thereof may always be found in the huts. It is also used as pack straps, which are put around the forehead and support the load carried on the back.

PITA FIBER.—Pita or silk-grass fiber (M.: *kara;* S.: *awa*) is employed for similar uses as bast fiber, and the articles made from it are practically indestructible. It is also made into fishlines, fish nets, and bowstrings, and used to repair shoes. Its extraction is very laborious. The pulpy covering surrounding the fibers is removed by scraping the surface of the leaf on a flat board with the aid of a machete or heavy iron knife. The fibers, which are thereby exposed, are then loosened and easily pulled from their bed by rubbing them crosswise of the leaf with the leaf pressed down upon the flat board. They are then washed to remove any adhesive pulp, dried, and rolled on the thigh into twine.

285 BASKETRY.—Basketry is not highly developed, although in such a well-watered country as the Mosquito Coast there is no lack of palms, vines, creepers, and epiphytic plants which may be used in basketwork. Certain vines are used in tying material, especially in the construction of the dwellings. The carrying bag of bark fiber or pita fiber takes to a large extent the place of baskets. From *wari* withes is made a round basket (M. and S.: *uslun*, *usnuñ*), which is used to store calabashes and other small kitchen utensils. Other types made by the Sumu are called by these Indians *wah-tâina* and *sidan*. A large waterproof basket, known locally by the name *pataki*, is obtained in trade from the Black Carib; it is made from *siwa* withes.

281 177 LEATHER WORK.—The art of tanning has apparently been learned from the whites. The bark of numerous indigenous trees is used by the Indians for tanning purposes. Leather is used nowadays for drumheads, masquerade dresses, sandals, moccasins, crude saddles, and belts.

383 RUBBER INDUSTRY.—Some of the Indians have learned the process of hardening the milk of the rubber tree (*Castilla* sp.) by treating

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mangroves, reeds, and coarse grasses. Then follows the real tropical forest with very fertile soil, consisting on the surface of vegetable humus. In order to penetrate the forest the hunter has to cut his way through the tangled mass of vines and epiphytes with the aid of his machete. [137]

North of Rio Patuca the fertile areas are characterized by the existence of extensive "cohune ridges," that is, places dotted with the cohune or corozo palm (*Attalea* sp.). A great number of other palms are found in this region, but only two of them are cultivated and play an important part in the food supply, the coco palm and the pejivalle. Among the other tree forms characteristic of the forest may be mentioned the following: Ceiba (*Ceiba pentandra* Gaertn.), mahogany (*Swietenia macrophylla* King), Spanish or West Indian cedar (*Cedrela* sp.), rosewood, rubber tree (*Castilla* sp.), sapodilla (*Sapota sapotilla*), lignum vitae or guayacán (*Tecoma* sp.), Santa Maria or calaba (*Calophyllum brasiliense* var.), and balsa or corkwood (*Ochroma lagopus*). Epiphytic orchids are especially numerous and rare varieties are also found. The strong withes or *bejucos* on the trees are used in basketry and as a tying material. [285]

From Rio Tinto to Rio Grande the dense forest is at times interrupted by large areas of pine ridges or savannas. These are undulating plains covered with gravel or coarse sand, overgrown with grass, myrtaceae, oaks, nances, small fan palms and long leaf or pitch pines. This pine (*Pinus tenuifolia* Benth.) has its southern limit on the Atlantic side of Nicaragua, a little north of Bluefields Bluff, in latitude 12° 5′ north. Few big trees are to be found in these savannas; there is little underbrush, epiphytes and lianas are scarce, and the whole presents a parklike appearance. On the rich alluvial soil on both sides of the streams traversing the savannas grows a dense and luxuriant vegetation resembling the real forest.

ANIMAL KINGDOM.—Zoologically the Mosquito Coast belongs to South America rather than to North America. In this sparsely inhabited region may be found a great number of species of animal life. The largest mammals are the tapir and the manatee; the latter is still an important animal of food for the Indians, but it is getting rare now. [136]

In the jungle are found such beasts of prey as the jaguar, the puma or cougar, and the ocelot; a black variety of the jaguar is occasionally met with. The howling monkey, the spider monkey, and the white-faced or capuchin monkey are found on the tree tops; the two last-named ones are, together with two species of deer and two species of peccary, the most important food animals of the Indians. [224]

Three species of anteaters, many armadillos and opossums, and 2-toed and 3-toed sloths may be met with. Among the rodents may be mentioned the agouti, paca, several species of porcupine, squirrels,

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OTHER HANDICRAFTS

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2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [987]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

2: Kirchhoff E-4 (no date) 1948
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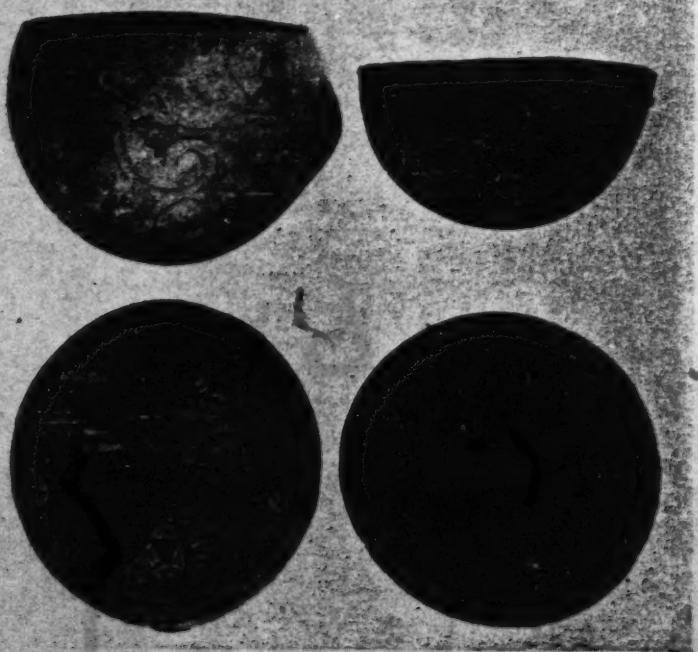

PLATE 36.—Sumo manufactures. *Top:* Beadwork. *Bottom:* Decorated gourd bowls. (Courtesy American Museum of Natural History.)

[p. 228 - B]

1: Conzemius M-4, 5 (1921) 1932
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323 the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

323 172 531 ANCIENT POTTERY VESSELS.—The pottery objects found in many parts of the Mosquito Coast, chiefly in old burial grounds, indicate a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

172 532 ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, probably the Sumu territory, the discovery of human heads, busts or entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

248 CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

286 462 A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

286 TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dŏk;* U.: *ani*), girdles or

a b

a, Net carrying bag made from the fiber of the pita or silk grass plant. Sumu of Rio Patuca; b, saddlebag made by the hispanized Sumu of upper Rio Grande

[p. 50 A]

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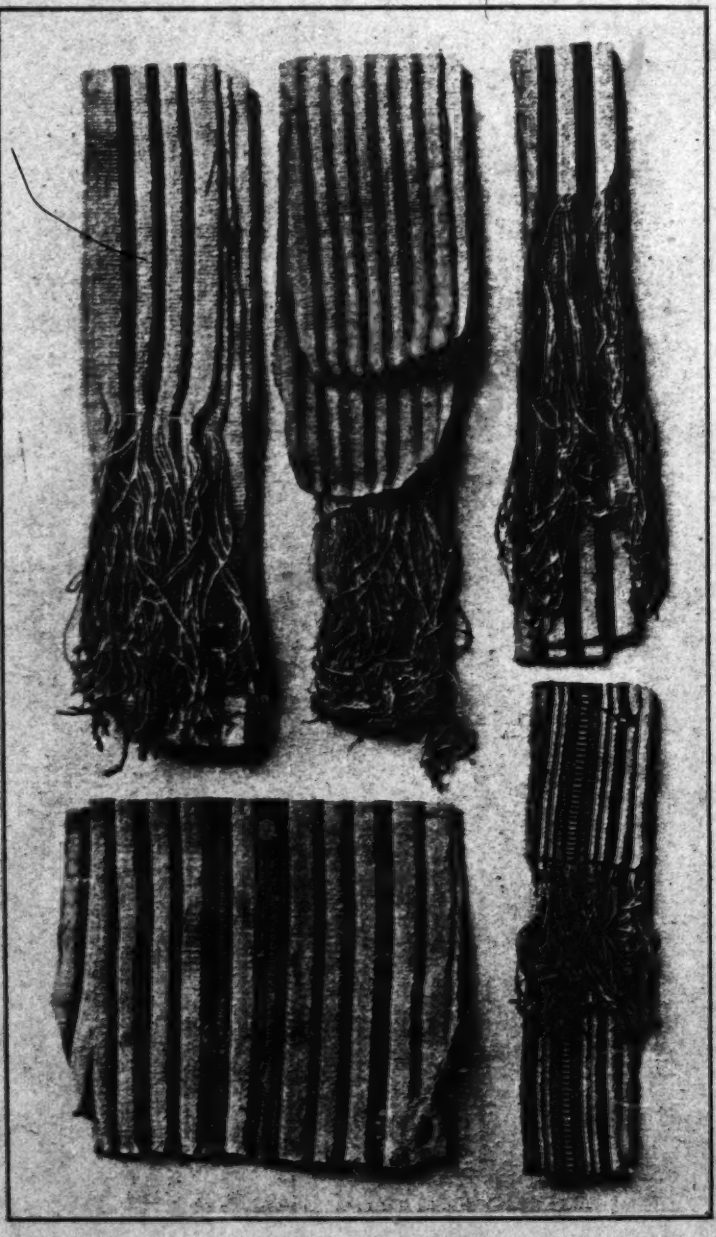

FOUR COTTON GIRDLES AND A PIECE OF COTTON CLOTH TO BE USED IN MAKING A HUNTER'S BAG

Sumu of Rio Bocay and Rio Waspuk.

[p. 50 B]

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[p. 50 b]

HAMMOCK MADE FROM THE BAST FIBER OF THE SANI TREE
Miskito of Rio Platano.

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1: Conzemius M-4, 5 (1921) 1932
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sashes (M.: *yalasawa;* S.: *bamaksitna*), hammocks (M.: *silmika;* S.: *wak*), and into shot bags or hunter's bags (M. and S.: *malipuk*). The long sleeveless garment, called *sipal* by the Miskito and *kiškura* by the Sumu, is not made any longer. All these cotton textiles, although coarse in texture, are soft to the touch. They are of excellent quality and the patterns are always inwoven. Sometimes a fringe of the white down of the muscovy duck extends all round the selvage. According to Exquemelin (Engl. edit.: 251) bed sheets were also made of cotton in former days by the Miskito.

286

Spindle.—The spindle (M.: *blakat;* S.: *malkat, malakat*)[17] consists of a shank made from the hard wood of the pejivalle palm. It measures from 1 to 1½ feet in length and tapers to a point on both ends. The whorl or fly is inserted at about 2 inches from the lower extremity, and the whole presents the appearance of a gigantic top. The whorl is usually made of a rare, very hard and heavy marblelike rock, which occurs in different colors and is called *kupa* by the Indians. Turtle or tortoise shell, manatee bone, clay seeds, and even heavy wood are also employed occasionally for this purpose. The shape of the whorl varies considerably; most commonly it is of conical form. The largest diameter varies from 1 to 1½ inches, and the height from three-quarters of an inch to 1 inch.

283

Spinning.—A very curious method is used to spin (M.: *blakaya, bitikaya;* T. and P.: *wšinin, wšinini;* U.: *tšihnaka*). A cotton thread, drawn by the left hand of the operator from a pile which she is holding in her lap, is attached to the spindle a little above the whorl. The spindle is placed in a calabash and is made to revolve very rapidly by means of the thumb and forefinger of the right hand. With each twirling movement the spindle is kept in rotation for about half a minute by the momentum of the whorl, during which time the operator is continually drawing out cotton thread, which is then wound on the spindle. This process is repeated until the spindle is full.

Weaving.—The cotton thread is woven (M.: *lukaya;* T.: *kilnin;* P.: *anini;* U.: *dalnaka*) on a horizontal loom (M.: *slabin;* S.: *slabin, silamka*) of most simple construction and similar to the one shown on the Mexican Codices, and still used by the Maya and other Central American tribes. It consists of a cloth beam and a yarn beam, which are connected to each other by the warp. The yarn beam is attached to a house post, about 6 feet from the ground, while the cloth beam is attached round the back of the weaver by a thick cord, enabling her to tighten the warp at will by merely leaning backward. The completed material is rolled up at the lower end. Looms of similar technique are also found in South America and Oceania.

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[17] Cf. Mexican *malacatl*.

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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[17] T., P.: *wah;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *trâusis*, from the English; T., P.: *kal-anin;* U.: *kalson*, from the Spanish "calzón") with the tails generally not tucked in. They make these articles themselves from imported cloth or they obtain the finished garment by way of trade. Formerly the Sumu used a sort of shirt or poncho, consisting merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open at the approach of rain he pulls his shirt off and covers it up with large *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

[177] [439] [287]

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Nowadays it is made of imported bright-colored cloth, but formerly the common tunu bark cloth was used for this purpose. The upper part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *tatâi* by the Sumu.

[439] [287]

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[18] S.: *kiñkura*) which hung down to the knees; it was beautifully embroidered with the down of the muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalasawa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

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[17] This name is mentioned in 1699 under the form *purprey* (M. W.: 307, 308).
[18] Compare the word "huipil" in Mexican-Spanish.

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301 ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima [824] de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaška*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

301 FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments ●287 by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art 232 of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from [825] the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

301 PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

301 NOSE AND LIP ORNAMENTS.—The nasal septum was formerly per- 304 forated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

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(Spanish "torta" or "plancha"). The milk, adhering to the cuts made into the bark, blackened upon exposure to the sun and air; it was left to coagulate there, and then wrapped up in bundles separate from the other rubber. This was shipped mostly to New York, where it was known as "scrap rubber" or "picket rubber" (Spanish "burucha," the "sernamby" of the Brazilians). In later years the spot at the foot of the rubber tree was cleared and the milky juice was allowed to drop to the ground, taking its own time to coagulate. After a couple of weeks, when it was sufficiently dry, it was rolled up and made into bundles varying from 50 to 200 pounds in weight. This is the "strip rubber" of commerce (Spanish "tira" or "cuera").

When this industry started in 1860 large rubber trees from 4 to 5 feet in diameter were not uncommon. These yielded, when first cut, about 20 gallons of milk, each gallon of which furnished 2 pounds of rubber. After an ordinary bleeding the tree soon recuperates, and may be tapped again the following year. Unscrupulous collectors merely felled the tree in order to facilitate the work. By this pernicious method large trees have been made to yield over a quintal of rubber, but gradually all the big trees were killed and even specimens measuring 3 feet in diameter became rare. Many huleros then adulterated the rubber with the latex derived from the tunu tree; the resulting mixture being less elastic, and consequently of inferior quality, the product from the Mosquito Coast yielded a lower price than that from other regions of Central America.

Previous to 1860 rubber was collected in thick circular cakes, which were used only to make black paint from the melted gum.

MANUFACTURE OF BARK CLOTH

In the northern part of the Mosquito Coast a coarse brownish cloth is pounded from the inner bark of a tree closely related to the rubber tree (*Castilla* sp.). The cloth, as the tree itself, is known throughout the country by the Miskito name *tunu*,[31] while the Twahka and Panamaka call the tree *tikam*, and the finished product *amat*.[32] The tree does not grow in the region inhabited by the Ulwa, and these Indians use the bark of the rubber tree (*tas*) for the manufacture of bark cloth, which they call *tas-bûana* "pounded rubber."

USES OF BARK CLOTH.—Nowadays bark cloth is made almost exclusively into "sheets" or "blankets" for the bed, and into loin cloths (M.: *palpura*; T., P.: *wah-uto*; U.: *ani*). In former days it furnished the clothing for rich and poor, although the gala dress, of men of rank at least, appears to have been of cotton.

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[31] This name is already found by M. W. (307, 308) in the form *tono*.

[32] *Amatl* or *quauhamatl* is the Mexican name for a species of fig, the bark of which was made into paper and clothing.

1: Conzemius M-4, 5 (1921) 1932
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• 287 PREPARATION OF TUNU CLOTH.—The tunu tree is cut down and deprived of its bark; the latter is then soaked in water for a few days, after which the sticky gum or milk adhering to it is scraped off. The bark is then dried in the sun and kept in the hut until the women find time to pound it into cloth. In this state it is called *kusni* by the Miskito, Twahka, and Panamaka, and *kuska* by the Ulwa. As it becomes hard and shrinks considerably, it has to be submerged in the neighboring stream for a short time before the pounding of it begins. The latter operation is performed on a small log[33] (M.: *tun-dusa;* S.: *lañlañ*) with the aid of a wooden mallet having the shape of a short thick club, into which longitudinal ridges have been made at the head part. This mallet is known by the names *kahka* and *para*, after the two small species of palm, from the stem of which it is made.[34] The Miskito living around Brus Lagoon and on the lower Rio Patuca also make use of the stem of a small fan-leafed palm which grows in that region and is known to Indians and foreigners by the name "palmetto." The bark extends gradually upon being pounded, and it becomes soft and flexible. After being washed and dried, it is ready for use, and has a brownish color. In Oceania the same process is employed and a similarly shaped mallet is used to manufacture the bark cloth, known by the name "tapa," but the tree of those regions is a species of Morus.

WHITE BARK CLOTH.—A similar cloth, but almost white in color and of superior quality, is obtained by the same process from the inner bark of a species of Ficus (S.: *yakuta, yakanta*) and likewise from the rubber tree (*Castilla* sp.). But in both cases the manufacture of the cloth is more laborious. The cloth from these two trees is known locally as "white tunu" (M.: *tunu pihni;* S.: *yakanta, tas-banna*); it [754] is used by the sorcerer in connection with incantations. For this purpose the sukya marks it with designs in black and red obtained with the aid of clay, charcoal, or vegetable juices.

Raveneau de Lussan (439) mentions the manufacture by the Miskito of clothing and covers from the "bastard palm"; the present writer ignores what kind of tree is meant thereby, as no part of any palm is utilized nowadays for such a purpose.

CERAMICS

323 Pottery making is rapidly becoming a lost art among the Sumu, owing to the introduction of iron and cheap tinware, while it is entirely unknown to the Miskito of the present day. The Sumu from Rio Bocay have attained some skill in making earthenware of different

[33] According to Exquemelin (Engl. edit.: 251) the Miskito were pounding their bark cloth upon stones around 1671.

[34] It is not uncommon that the plant, which furnishes the material, gives also the name of the tool.

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles.
Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [531]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [487]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 445
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

1: Conzemius M-4, 5 (1921) 1932
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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[17] T., P.: *wah;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from [177] both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *trâusis*, from the English; T., P.: *kal-anin;* U.: *kalson*, from the Spanish "calzón") with the tails generally not tucked in. They make these articles themselves [439] from imported cloth or they obtain the finished garment by way of trade. Formerly the Sumu used a sort of shirt or poncho, consisting [287] merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open at the approach of rain he pulls his shirt off and covers it up with large *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Now- [439] adays it is made of imported bright-colored cloth, but formerly the common tunu bark cloth was used for this purpose. The upper [287] part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *tatâi* by the Sumu.

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[18] S.: *kiñkura*) which hung down to the knees; it was beautifully embroidered with the down of the [531] muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalasawa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

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[17] This name is mentioned in 1699 under the form *purpray* (M. W.: 307, 308).
[18] Compare the word "huipil" in Mexican-Spanish.

1: Conzemius M-4, 5 (1921) 1932
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Nowadays the Miskito wear on feast days old coats which they have obtained from the foreign residents. The bright-colored necktie, worn sometimes without any collar, is then allowed to fall over the coat. The socks, which are not worn on ordinary occasions, are pulled over the trousers like overboots. Bright-colored handkerchiefs (*aikar*) are also in great favor.

FESTIVAL DRESS (SUMU).—At their festivals the Sumu of to-day paint the entire body red and black, so that it is impossible for them to recognise each other. At such an occasion their only clothing consists of a loin cloth and a headdress (*sira*). The latter is made from the split stem of a kind of bamboo, known locally by the Miskito name *bratara*, from which the bark has been taken off. The different slices are painted and then tied together with black cotton thread, and the cap thus formed is ornamented with the feathers from gaily colored birds, as parrots, macaws, and toucans, or the curly head feathers of the curassow. From this headgear depends a piece of "white tunu" or tree-bark cloth; this part of the cap is called *pakna*. It is painted with various designs, and hangs down the back to the hips. On the neck, wrist, and knee they wear, besides, strings of beads worked into designs; round the upper part of the arm they tie a cotton string to which small feathers have been attached.

HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumuru*, *sumuru*) or the English "straw hat" (*trahat*, *tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

FOOTGEAR.—Sandals are not known in the region under consideration, but they are used by the Paya. Moccasins are made occasionally by the Miskito, and shoes are bought in the local shops, but there are no native names for these articles. The women do not use any footgear at all except in the more advanced communities.

1: Conzemius M-4, 5 (1921) 1932
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PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. & S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakwa;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

1: Conzemius M-4, 5 (1921) 1932
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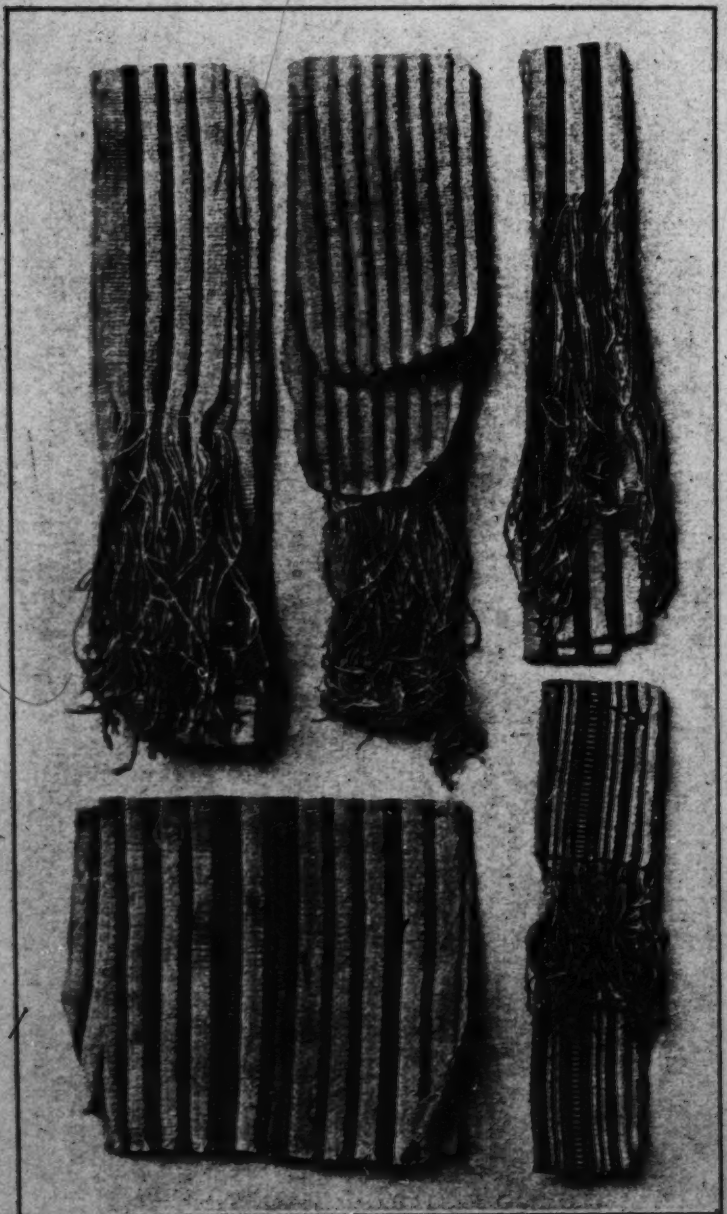

FOUR COTTON GIRDLES AND A PIECE OF COTTON CLOTH TO BE USED IN MAKING A HUNTER'S BAG

Sumu of Rio Bocay and Rio Waspuk.

[p. 50 B]

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams. Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built of three logs on slightly raised mud platforms inside the houses. Stored near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

PLATE 25.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

[p. 228-A]

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, whereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[35] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[28]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[35] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk suplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300). II. Ossification of the bones of the wrist (pp. 494-509). III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, *56*.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)* The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tinwat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melanococca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

1: Conzemius M-4, 5 (1921) 1932
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CLOTHING

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WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Now- [439] adays it is made of imported bright-colored cloth, but formerly the common tunu bark cloth was used for this purpose. The upper [287] part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *talâi* by the Sumu.

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[17] This name is mentioned in 1699 under the form *purproy* (M. W.: 307, 308).
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HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumruru*, *sumuru*) or the English "straw hat" (*trahat*, *tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

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1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard-wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsañ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasañka*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. & S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakwa;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

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3: Pijoan D-5 (ca. 1945) 1946
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from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumuru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)* The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tisnat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melanococca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

I: Conzemius M-4, 5 (1921) 1932
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FESTIVAL DRESS (MISKITO).—M. W. (308) gives us a description of the gala dress of the Miskito which was worn on festal occasions. Besides the loin cloth the men wore cotton bands with bright feathers attached around their wrists and above and below the knees. The body, or the face only, was painted with pinewood charcoal, over which a "varnish" of turpentine was applied. On the breast was a thin plate made of a Spanish dollar piece beaten out flat, the successor of the gold plate met on this coast and in Costa Rica and Panama at the time of Columbus. Between the shoulders was suspended a tube made from a shin bone, with a bunch of feathers, while sea shells depended from the ears. A rod of bone or cane was worn at the pierced septum of the nose; a turtle hook, inserted in a perforation of the lower lip, supported a pendent plate of brass or shell.

Nowadays the Miskito wear on feast days old coats which they have obtained from the foreign residents. The bright-colored necktie, worn sometimes without any collar, is then allowed to fall over the coat. The socks, which are not worn on ordinary occasions, are pulled over the trousers like overboots. Bright-colored handkerchiefs (*aŋksar*) are also in great favor.

FESTIVAL DRESS (SUMU).—At their festivals the Sumu of to-day paint the entire body red and black, so that it is impossible for them to recognize each other. At such an occasion their only clothing consists of a loin cloth and a headdress (*sira*). The latter is made from the split stem of a kind of bamboo, known locally by the Miskito name *bratara*, from which the bark has been taken off. The different slices are painted and then tied together with black cotton thread, and the cap thus formed is ornamented with the feathers from gaily colored birds, as parrots, macaws, and toucans, or the curly head feathers of the curassow. From this headgear depends a piece of "white tunu" or tree-bark cloth; this part of the cap is called *pakna*. It is painted with various designs, and hangs down the back to the hips. On the neck, wrist, and knee they wear, besides, strings of beads worked into designs; round the upper part of the arm they tie a cotton string to which small feathers have been attached.

HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumruru*, *sumuru*) or the English "straw hat" (*trahat*, *tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

FOOTGEAR.—Sandals are not known in the region under consideration, but they are used by the Paya. Moccasins are made occasionally by the Miskito, and shoes are bought in the local shops, but there are no native names for these articles. The women do not use any footgear at all except in the more advanced communities.

1: Conzemius M-4, 5 (1921) 1932
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the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *awal-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[19]

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tiñ-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quarts, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

[19] According to Bell (b: 158) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

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1: Conzemius M-4, 5 (1921) 1932
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ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am mínik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasañka*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

NOSE AND LIP ORNAMENTS.—The nasal septum was formerly perforated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

1: Conzemius M-4, 5 (1921) 1932
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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic earrings (M.: *kyama-lula, kyama-dusa, kul-dusa, bapriñ;* S.: *tapana*) and finger rings (M.: *mat-diñka, mihta-diñka;* S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths.

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives.

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females.

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus;* P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing.

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.: 308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Pispis mining district, around Cuera Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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316 this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

301 439 411 Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

324 METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-siksa;*[37] T., P.: *pransa, paransa;* U.: *ki-tisna*).

324 172 ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[37] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cuabul" (=*kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *siksa* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsañ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

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BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (*2*, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasañka*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (187), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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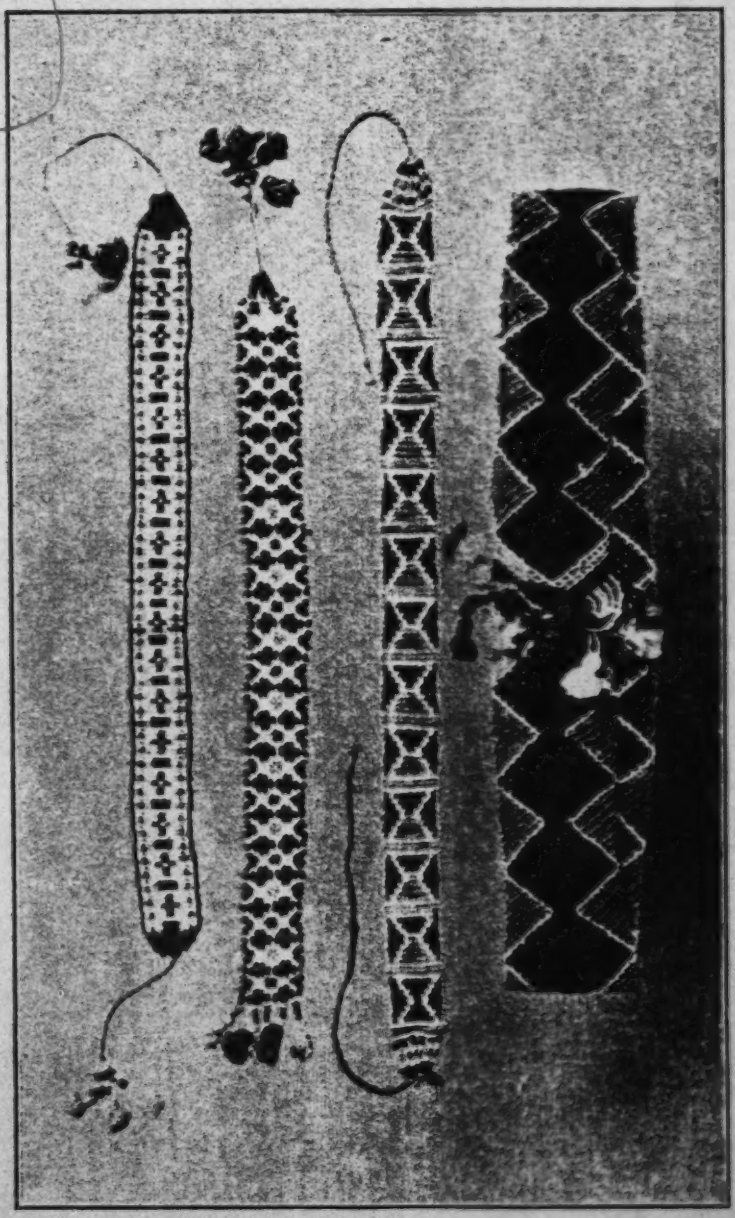

BEADWORK
Miskito and Sumu of Rio Coco.

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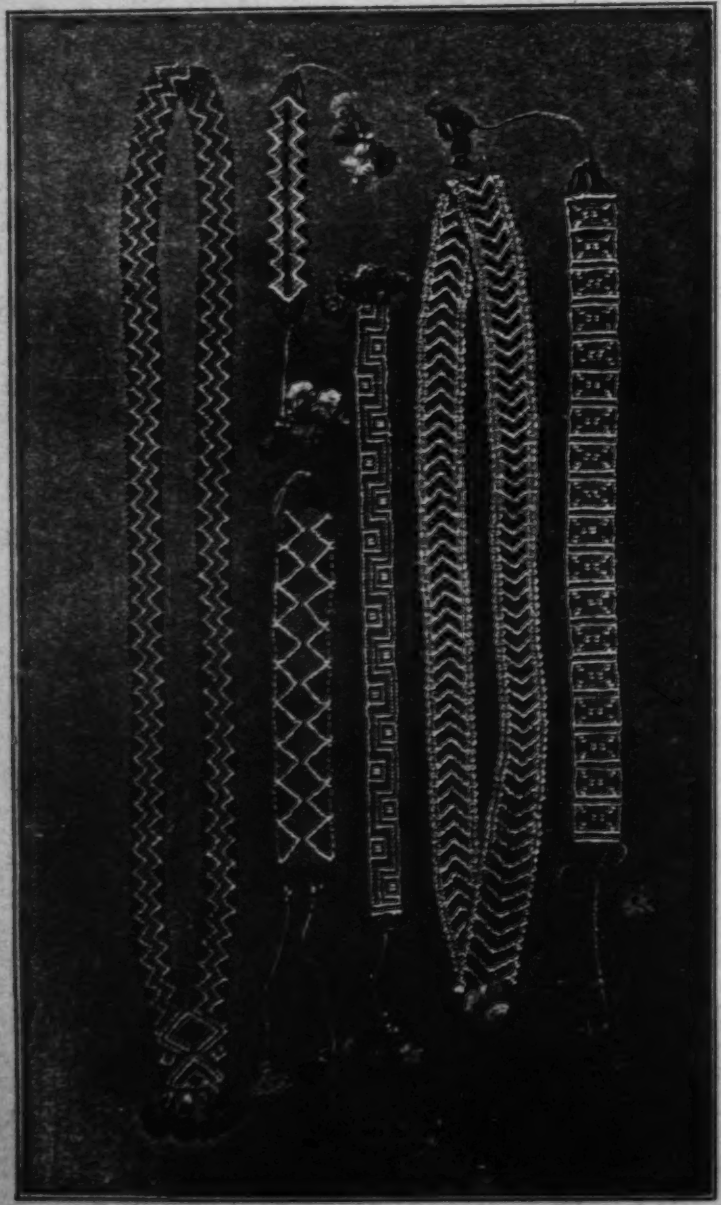

BEADWORK
Miskito and Sumu of Rio Coco.

[p. 54 C]

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

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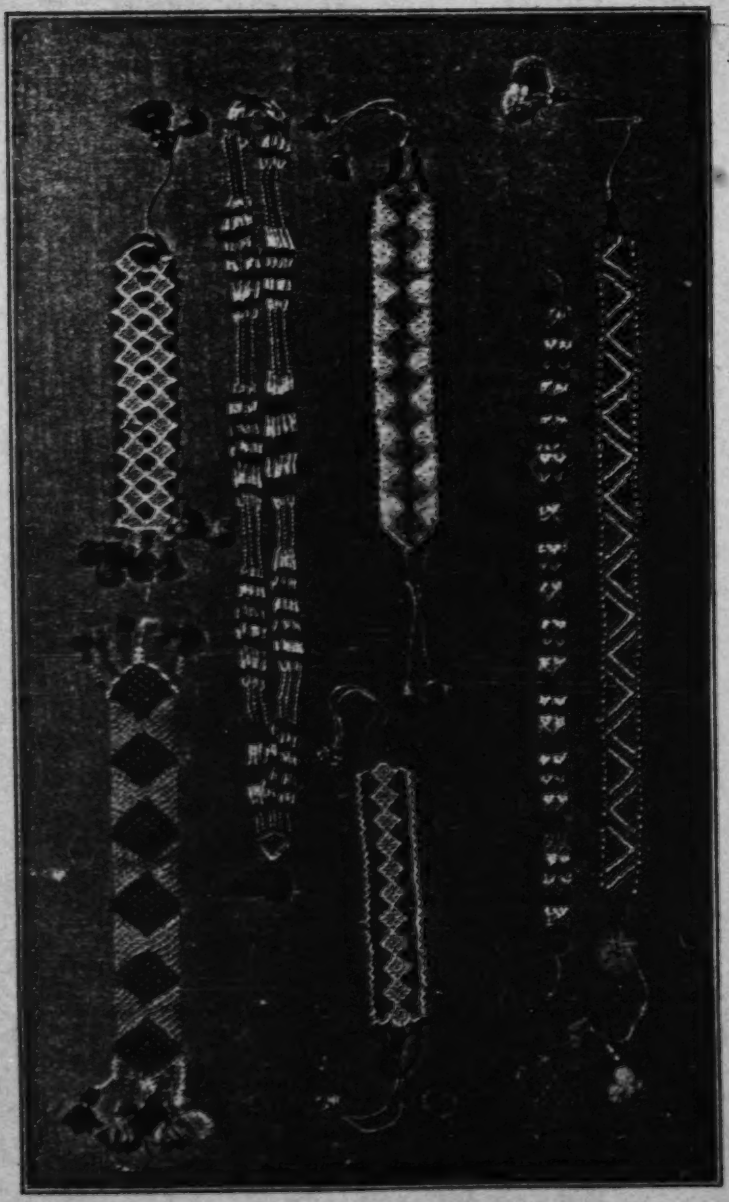

BEADWORK
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[p. 54D]

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

342 time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams.

352 Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built [354] of three logs on slightly raised mud platforms inside the houses. Stored 415 near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

291 Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still [177] worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

302 Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated ● [301] theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

301 Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [487]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 445
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

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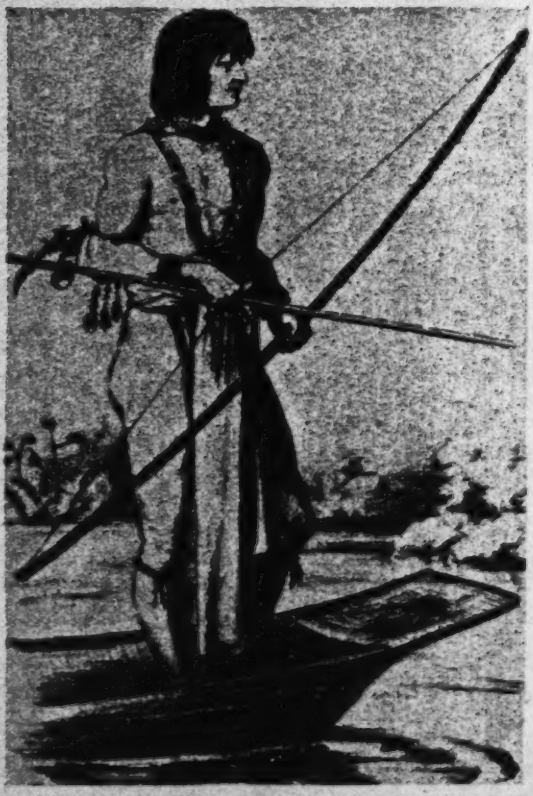

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PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

[p. 228-A]

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)*. The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tisuat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melanococca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

FESTIVAL DRESS (MISKITO).—M. W. (308) gives us a description of the gala dress of the Miskito which was worn on festal occasions. Besides the loin cloth the men wore cotton bands with bright feathers attached around their wrists and above and below the knees. The body, or the face only, was painted with pinewood charcoal, over which a "varnish" of turpentine was applied. On the breast was a thin plate made of a Spanish dollar piece beaten out flat, the successor of the gold plate met on this coast and in Costa Rica and Panama at the time of Columbus. Between the shoulders was suspended a tube made from a shin bone, with a bunch of feathers, while sea shells depended from the ears. A rod of bone or cane was worn at the pierced septum of the nose; a turtle hook, inserted in a perforation of the lower lip, supported a pendent plate of brass or shell.

Nowadays the Miskito wear on feast days old coats which they have obtained from the foreign residents. The bright-colored necktie, worn sometimes without any collar, is then allowed to fall over the coat. The socks, which are not worn on ordinary occasions, are pulled over the trousers like overboots. Bright-colored handkerchiefs (*añksar*) are also in great favor.

FESTIVAL DRESS (SUMU).—At their festivals the Sumu of to-day paint the entire body red and black, so that it is impossible for them to recognize each other. At such an occasion their only clothing consists of a loin cloth and a headdress (*sira*). The latter is made from the split stem of a kind of bamboo, known locally by the Miskito name *bratara*, from which the bark has been taken off. The different slices are painted and then tied together with black cotton thread, and the cap thus formed is ornamented with the feathers from gaily colored birds, as parrots, macaws, and toucans, or the curly head feathers of the curassow. From this headgear depends a piece of "white tunu" or tree-bark cloth; this part of the cap is called *pakna*. It is painted with various designs, and hangs down the back to the hips. On the neck, wrist, and knee they wear, besides, strings of beads worked into designs; round the upper part of the arm they tie a cotton string to which small feathers have been attached.

HEADGEAR.—Many Indians buy hats which are known by the Spanish name "sombrero" (*sumruru, sumuru*) or the English "straw hat" (*trahat, tarahat*). They are little used in their daily occupations and constitute above all an article of ornament. To the women the hat is, however, unknown, nor is there any other sort of headgear used by them.

FOOTGEAR.—Sandals are not known in the region under consideration, but they are used by the Paya. Moccasins are made occasionally by the Miskito, and shoes are bought in the local shops, but there are no native names for these articles. The women do not use any footgear at all except in the more advanced communities.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. &. S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakwa;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *awal-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[19]

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tiñ-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quartz, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

[19] According to Bell (b: 158) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic ear-rings (M.: *kyama-lula*, *kyama-dusa*, *kul-dusa*, *bapriñ*; S.: *tapana*) and finger rings (M.: *mat-diñka*, *mihta-diñka*; S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths. 301 304

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives. 302 [764]

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females. 302 824

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus*; P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing. 412 302

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

other hair on the face, except that of the eyebrows and eyelids. The growth of beard was not liked and the hair was pulled out with the aid of two small thin sticks, between which they pinched it and plucked it out. A small stick of wood which had been partially split was also used for that purpose. Certain wood ashes were rubbed into the skin to check the growth. Now light beards and mustaches are sometimes met with.

DEFORMATION OF BODY

HEAD.—Head deformation (M.: *lal tanta daukaya;* T., P.: *tun labanin;* U.: *tun labanaka*) was until quite recently practiced by all the Sumu tribes except the Bawihka. The little child was placed in a sort of cradle (M.: *kuhcañ;* T.: *pala;* P., U.: *lim*), which was suspended by means of bast-fiber ropes attached to the roof, so that it could be swung like a hammock. A folding flap of wood or of the "bratara" reed at the top of the cradle was tied firmly to the crown of the head, a thick layer of cotton being applied to prevent injury. The infant was kept in sitting position and secured in the cradle in such a manner that it could not move the head at all. From time to time the bandages and the folding flap were removed in order to allow the child a little freedom. The mother suckled her baby without unswathing it from the board. The object was to flatten the top of the head, as the ordinary-shaped head was considered ugly. Some Indians told me that they did not like to have such a round head as a monkey. Grossmann (b: 4) states, however, that the head was flattened in order to adapt it to the broad, flat cap which is worn at festivals. As the Sumu wear the hair hanging square cut to the eyebrows in front, the peculiar flatness of the skull may escape the casual observer.

At the present time this practice has been abandoned altogether and the cradles have been replaced by hammocks. The first mention of head deformation among the Sumu appears to have been made by M. W. (304, 305, 307). A short description thereof as practiced by the Ulwa of Rio Escondido is given by Collinson (b: 149–150). The Miskito claim to have never practiced head deformation and they call the Sumu derisively *Lal-tanta* "Flat-head," which word corresponds to the Spanish "Chatos" found in the old documents. One of the early writers claims, however, to have observed the custom among the Miskito of Sandy Bay in 1709;[20] it is very likely that the Indians in question were Sumu slaves.

[20] Estos monstruos de las cabezas chatas tienen la costumbre de entablillarles a las criaturas cuando nacen, y en creciendo les falta la facción de la frente, sin distancia alguna del pelo de la cabeza a los de las cejas, que les hace imponderablemente horribles (Alcedo y Herrera: p. xviii).

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SA15 Mosquito SA15

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1: Conzemius M-4, 5 (1921) 1932
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142 SACRAL PIGMENT SPOT.—The "Oriental mark" (Mongolen-Fleck) is met with among all these tribes during early infancy. It consists of a bluish-gray spot found in the sacral region, which gradually disappears in adult life. The Indians pay no attention to it and most of them do not even know of its existence.

141 CEPHALIC INDEX.—The Sumu are on the average hyperbrachycephalic, that is, they have exceedingly broad heads. The cephalic index, which is obtained by dividing the breadth of the head by its length and multiplying the result by 100, was found to be 89.48 according to Schultz (71–72). This high figure is surpassed by few American tribes.[11] It may be the result of artificial deformation, since this practice was formerly current among the Sumu.

[304]

MORPHOLOGICAL FACE INDEX.—The Sumu are on the average mesoprosopic, that is, they have proportionally narrow faces; Schultz (72) found a face index of 84.82 among this tribe living on Rio Prinzapolca, while among the Rama the figure was higher (85.20).

NOSE.—The nose of both Miskito and Sumu is relatively large; the profile is slightly convex among most of pure-blooded Indians. The nasal index is, on the average, very low among the Sumu, the range of variation extending from 66.0 to 83.3, with 73.76 as an average (Schultz: 74). This tribe is therefore mesorrhinic; the Rama, however, have even a narrower nose and are classed as leptorrhinic, the index ranging from 57.6 to 75.9 with an average of 65.96, a rather unusually low figure for American Indians.

EARS.—The Indians of the Mosquito Coast have relatively narrow ears, the physiognomic ear index averaging 54.09 among the Sumu; those of the Rama are still narrower with an average ear index of only 52.64 (Schultz: 75).

142 EYES.—The large brilliant eyes are so dark brown that they appear black to the casual observer. In both Miskito and Sumu they are horizontal, but those of their northern neighbors, the Paya, have a slight Mongoloid tilt.

LIPS AND CHIN.—The lips are full, but not thick, among the Sumu and the pure-blooded Miskito, while the chin is generally "receding"; a prominent chin occurs rarely.

HANDS AND FEET.—The hands are small as compared with Whites and Negroes. In most individuals the annularis is slightly longer than the index finger; the reverse is apparently never the case. The little finger is relatively very small and stands inside of the direction of the ulnar edge of the palm, as if it had been crowded toward the fourth finger. The smallness and position of this finger is not an inherited racial character, but the direct result of the narrow paddle

[11] Boas, quoted by R. Martin (Lehrbuch der Anthropologie, Jena, 1914) found an average cephalic index in Wichita Indians (Oklahoma) of both sexes of 89.5 and one of 89.7 in male California Indians.

1: Conzemius M-4, 5 (1921) 1932
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the women with the aid of small wooden sticks (M.: *aulala-dusa*; S.: *awal-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alamir*; S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *cuas-maka*; S.: *cuas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[11]

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami*; S.: *tik-pana*, *rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya*; T., P.: *ditmak-titnin*; U.: *dakat-citnaka*) of shell beads, quartz, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

[11] According to Bell (b: 155) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

1: Conzemius M-4, 5 (1921) 1932
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ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *taeañka*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

NOSE AND LIP ORNAMENTS.—The nasal septum was formerly perforated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

1: Conzemius M-4, 5 (1921) 1932
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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic earrings (M.: *kyama-lula, kyama-dusa, kul-dusa, bapriñ;* S.: *tapana*) and finger rings (M.: *mat-diñka, mihta-diñka;* S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths.

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives.

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females.

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus;* P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing.

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

1: Conzemius M-4, 5 (1921) 1932
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other hair on the face, except that of the eyebrows and eyelids. The growth of beard was not liked and the hair was pulled out with the aid of two small thin sticks, between which they pinched it and plucked it out. A small stick of wood which had been partially split was also used for that purpose. Certain wood ashes were rubbed into the skin to check the growth. Now light beards and mustaches are sometimes met with.

DEFORMATION OF BODY

HEAD.—Head deformation (M.: *lal tanta daukaya;* T., P.: *tun labanin;* U.: *tun labanaka*) was until quite recently practiced by all the Sumu tribes except the Bawihka. The little child was placed in a sort of cradle (M.: *kahsañ;* T.: *pala;* P., U.: *lim*), which was suspended by means of bast-fiber ropes attached to the roof, so that it could be swung like a hammock. A folding flap of wood or of the "bratara" reed at the top of the cradle was tied firmly to the crown of the head, a thick layer of cotton being applied to prevent injury. The infant was kept in sitting position and secured in the cradle in such a manner that it could not move the head at all. From time to time the bandages and the folding flap were removed in order to allow the child a little freedom. The mother suckled her baby without unswathing it from the board. The object was to flatten the top of the head, as the ordinary-shaped head was considered ugly. Some Indians told me that they did not like to have such a round head as a monkey. Groesmann (b: 4) states, however, that the head was flattened in order to adapt it to the broad, flat cap which is worn at festivals. As the Sumu wear the hair hanging square cut to the eyebrows in front, the peculiar flatness of the skull may escape the casual observer.

At the present time this practice has been abandoned altogether and the cradles have been replaced by hammocks. The first mention of head deformation among the Sumu appears to have been made by M. W. (304, 305, 307). A short description thereof as practiced by the Ulwa of Rio Escondido is given by Collinson (b: 149–150). The Miskito claim to have never practiced head deformation and they call the Sumu derisively *Lal-tanta* "Flat-head," which word corresponds to the Spanish "Chatos" found in the old documents. One of the early writers claims, however, to have observed the custom among the Miskito of Sandy Bay in 1709;[20] it is very likely that the Indians in question were Sumu slaves.

[20] Estos monstruos de las cabezas chatas tienen la costumbre de entablillarles a las criaturas cuando nacen, y en creciendo les falta la faccion de la frente, sin distancia alguna del pelo de la cabeza a los de las cejas, que los hace imponderablemente horribles (Alcedo y Herrera: p. xviii).

1: Conzemius M-4, 5 (1921) 1932
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TEETH.—Formerly the Sumu used to file or rather chip their teeth to sharp points; this was a laborious process and was performed by placing a dull knife against the back of the tooth, while the front of it was tapped with a stone implement.

EARS.—In 1502, on the testimony of Columbus, certain of the coastal tribes living to the west of Cabo Gracias a Dios, whether Miskito or Paya is uncertain, distended their ears to such an extent "that they might put a hen's egg into them." This statement is confirmed nearly two centuries later by Exquemelin (Sp. ed.: 185; Engl. ed.: 102; French ed.: I, 294–295), who states that the Indians of Rio Xagua (Rio Aguan) on the coast of Honduras were called by the buccaneers "Great Ears" on account of their extraordinary and large ears. Dampier (I, 32) also mentions a curious manner of ear deformation current among the Kukra of Corn Islands during the latter half of the seventeenth century. Both sexes from these islands had their ear lobes pierced during childhood; "by continually stretching with great pegs the opening became as large as a milled five-shilling piece." They wore therein round, smooth pieces of wood, "so that their ears seemed to be all wood with a little skin about them."

LEGS.—From the days of early infancy the Sumu females tie a narrow piece of cotton cloth firmly above the ankle and again below the knee. These bands, if ever removed, are immediately replaced by others. As a result of this custom the parts of the legs thus constricted are very thin, being hardly thicker than the actual bone, whereas the muscles of the calf bulge out to an abnormal degree. This custom, which was observed already by Dampier (I, 32) among the Kukra of the Corn Islands during the latter half of the seventeenth century, is also current among many Carib tribes of South America. Similar bands are occasionally worn by the females at the wrist and below the elbow, but here they serve merely the purpose of ornamentation.

VARIOUS.—Circumcision is said to have been practiced in former days by some of the Sumu tribes, but the writer was unable to obtain any details regarding that custom. Until quite recently the face of the young Sumu was also scarified.

DWELLINGS

VILLAGES.—The villages (M.: [illegible], from the English "town"; S.: asad) are constructed generally along the waterways, as the sea, lagoons, or rivers, which form the principal means of communication. The Miskito of the lower Rio Coco and of certain parts of the Nicaragua coast have some large villages with from 100 to 500 inhabitants, but the Sumu settlements consist of only two to six huts and count from 6 to 25 inhabitants. On account of the danger from floods the inland villages are often perched upon high banks of the stream.

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [31]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [367]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 445
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

2: Kirchhoff E-4 (no date) 1948
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846 Among some tribes, this ceremony is repeated at a later date. The *Sumo*
[304] are said to have practiced circumcision. The couvade is general.
[551] Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

881 **Puberty.**—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

841 Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

763 **Death.**—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

764 The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to
[532] be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

765 The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter.
[767] Shamans invoke the soul in order to discover who was responsible for
769 the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

768 According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

3: Pijoan D-5 (ca. 1945) 1946
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from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

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304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 There is no trace of any division in clans or exogamic kinship
624 groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would chose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kwatmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government educa-
[871] tion is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The In-
[654] dians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

674 Within the villages themselves government takes place with the
626 elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

tions on the edge of the rivers, often at a considerable distance from their villages.

INFLUENCE OF CULTIVATION UPON THE FOREST.—The bush, which springs up again from the seeds of the forest trees germinating in the ground, is cut down from time to time. After two or three crops have been obtained from the plantation, a variety of weedy-looking shrubs and grass begins to get a hold upon the land. The plantation is then abandoned, as the Indian does not consider it worth while to undertake the great amount of labor needed to keep the ground clear. He prefers to prepare a new plantation (M.: *insla disan;* S.: *yamak wisam*) by cutting down another patch of the virgin forest, where he is sure of a better crop.

The brushwood springing up in the abandoned plantation (M.: *insla prata;* S.: *yamak ba*), being not interfered with any longer, gradually chokes off the grass and weeds. As a number of the larger hardwood trees had been left standing in the first place, such an abandoned plantation will, after 15 or 20 years, not differ essentially from the surrounding primeval forest. It may then be cut again for the making of a new plantation. As the country is sparsely inhabited, the Indians will always find virgin forest within close distance from their home; besides, many of them are seminomadic and change their village sites from time to time. Were they to make their plantations for a long-continued period on the same spot, cutting down the brushwood again and again, a great change would gradually take place. The soil not containing any more seeds of forest trees, grass and a scrubby vegetation would in time spring up. This may be observed around certain villages, where by this manner the forest has been beaten back, inch by inch, gradually but surely.

BANANAS AND PLANTAINS.—It is noteworthy that the most important food plant of the Sumu and of the Miskito living toward the interior, the banana (M.: *sikse;* S.: *wakisa, pasa, isikini*), is not indigenous to America. It was apparently brought by the Spaniards from the Canary Islands during the early part of the discovery, first to Santo Domingo (Haiti), and from there to the mainland. According to the testimony of the buccaneers of the latter part of the seventeenth century, bananas and plantains were already cultivated in those days by the Miskito of Cabo Gracias a Dios. Raveneau de Lussan (429) saw in 1688 many bananas on the banks of Rio Coco, and states that they had been planted by the Albaoüins (= Sumu) and by the river currents. He also found this plant cultivated by the Mulattoes living around Cabo Gracias a Dios (438). Dampier (I, 9–10) mentions plantains among the Miskito, but he does not say anything about bananas. Exquemelin (English edit.: 114, 251), on the other hand, who visited the coast in 1671 and 1672, saw bananas, plantains, and

1: Conzemius M-4, 5 (1921) 1932
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The eating of earth (M.: *tasba;* S.: *sdû*), clay (M.: *slaûbla;* S.: *sdû*), sand (M.: *dûya;* S.: *kaûhmak*), and charcoal (M.: *kwasko, tmasko;* S.: *kusmak*) is very common among women and children. 261

NONFERMENTED BEVERAGES

DRINKING WATER.—The whole country is well watered and the Indians obtain their drinking water from the running streams on the banks of which their settlements are generally situated. Wells are also dug by those living near the sea. 312

WATER LIANAS.—Several varieties of water lianas, varying in size from 3 to 5 inches, can be found throughout the forest. When the stem is merely cut through only a few drops of water will issue; the vine must then be severed immediately about 2 or 3 feet farther down, whereupon a continual stream of water will flow, quite sufficient to quench the thirst of a person. The Indian holds the severed part of the stem in a vertical position, allowing the sap to run directly into the mouth. The vine must be cut above first, otherwise the sap will ascend so rapidly that hardly any will be obtained.

HONEY.—The Indians are very fond of the honey (M.: *nasma;* S.: *smak*) from the various species of wild, stingless bees which make their nests in hollow trees. The entrance to the nest is easily ascertained by watching the little bees flying about. The Indians either climb or fell the tree in order to get possession of the honey. The latter is always taken as a beverage, after being mixed with water, but even in its natural state it is not viscid, but almost as fluid as water. It has a subacid, highly fragrant taste. The Indians, while away from home, may make a meal of the contents of such a bee nest, but the average foreigner does not care much for it, and finds it greatly inferior to that of the European domesticated bee. The natives collect in bamboo joints what they are unable to consume immediately to take home to their family. 222

MILK.—The consumption of cow's milk is not general. When I inquired the reason from some Sumu of the upper Rio Waspuk they answered that they are not the descendants of cows, to drink their milk. 272

BANANAS AND PLANTAINS.—A great variety of nourishing drinks of vegetable origin are prepared by the Indians under consideration. Bananas are consumed largely in the shape of a pop, known locally by the name "wabul." The bananas for this purpose are used generally in the green state, before their contained starch has turned into sugar. They are peeled and cooked in an iron pot. Then the water is poured off and the bananas are thoroughly mashed in the same pot with the aid of a short wooden stick. During this process cold water is added little by little, and the whole is well stirred. No salt

3: Pijoan D-5 (ca. 1945) 1946
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of rain and humidity have eroded, the pit fills with water and the entire construction fills with flies. The dysentery epidemics at San Carlos usually begin about these latrines and extend to the periphery of the village. 164 514

Another contributing factor to the spread of dysentery is that in some areas well meaning visitors have encouraged the use of milk for children. In a territory devoid of refrigeration or adequate sterilization the use of milk should be derived from the mother's breast or directly from the cow's udder. On the other hand milk products such as cheese are less likely to be infected. Nevertheless, milk fluid serves as an excellent bacterial medium. Powdered milk might obviate such a hazard. 164 262

Drinking water in the larger villages may be considered a source of infection since water may be stored in containers not ideally suited for such a purpose or the water may be collected from the main river or other pools simply because the source is conveniently located. 164 312

The Indian customs are such as to depress the occurrence of dysentery. These customs are to drink water from clear running creeks (see map of San Carlos), and to perform their ablutions either in the large river or to dig holes for their excremata. If holes are dug in the bush they are immediately covered up after use. The Indian, unless educated otherwise, considers the communal use of a structure such as a collecting booth for feces and urine as an evil. It would thus appear that the invading culture (Spanish American) with its convenient latrine often in juxtaposition to the latrine, has furthered the dysentery problem. 164 514

Some of the latrines observed were of such a character that even the investigators used to the inconveniences of the bush felt repelled by the utterly uninviting stench and the great scatter of soiled paper throughout the establishment. Toilet paper, in many tropical areas of high humidity, offers itself as a remarkable medium for growth of molds which renders the paper useless. Latrines built by special sanitary engineers were misused, had eroded screens and were half filled with water. During the dry season when they were erected they were presumed to be ideal and satisfactory in every way.

If the wretched latrine is to be used, the use insecticides and disinfectants must be encouraged, otherwise dysentery will be present. The authors of this report endeavored to encourage the Indian practice of waste disposal.

Amoebic dysentery exists as far as could be determined in from 2-5 per cent of the population. Stool examinations at Waspam, revealed that 7 per cent of the adults and 2 per cent of the children had 164

1: Conzemius M-4, 5 (1921) 1932
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412 companion at work and on voyage, and the main tool in house, garden, field, and bush. The Indian uses it to dig postholes for his house, to cut down small trees, shrubs, lianas, grass, or weeds. With the machete he cuts down the underbrush when making a plantation and clears the latter from time to time of weeds and young bush. With the machete he also defends himself against wild animals, snakes, and the like, and, if necessary, against his own kind, which is often more dangerous than the wild beasts of the forest.

[B39] Formerly all the machetes used on the Mosquito Coast were imported from England, but in later years they were brought from the United States and from Germany.

412 313 AXES.—The Indians are very good at plying the ax (M.: *as*, from the Spanish "hacha"; S.: *ki*, *kidak*), as many of them have been working at the mahogany camps. The export of this valuable wood has been going on with various long interruptions for over two centuries. Even the women handle the ax fairly well, and cut up small tree stems to be used as firewood. The rectangular-shaped so-called American felling axes or Canada wedge axes are preferred by these Indians; in shape they resemble somewhat the *tubo* fish, and for that reason the Miskito call them *tub'as*.

412 172 STONE AXES.—Single or double bladed stone axes or celts (M.: *alwani makbra*, *imyula makbra*; S.: *alwana suma*, lit.: "thunder egg" or "lightning egg") have been unearthed in various parts of the country. They are grooved or ungrooved, and were firmly fixed in the thick part of a stone-cut wooden handle, or the handle was merely tied firmly to the ax with the aid of a withe passing around the groove. Some of these celts were provided with a short handle cut of the same solid rock. Dampier (I, 85) mentions some good grooved axes among the Indians of Rio Escondido (Kukra-Sumu), which were "flat and sharp at both ends," and were 10 inches long, 4 inches broad, and 3 inches thick in the middle.

Two simple stone axes from the Mosquito Coast have been depicted by Bovallius (II, 299, figs. 81, 82). Three fine monolithic axes from the Bluefields region have been described and illustrated by Saville (b: 34–36, fig. 15). The blade of these axes is of a form foreign to Central America, resembling certain axes from the Lesser Antilles and northern South America. In these three specimens the rounded handle, which has a length of 12 to 12½ inches, is slightly curved. They are respectively in the Museum of the American Indian, Heye Foundation (a), the Peabody Museum of Harvard University (b), and the United States National Museum (c). The first one of them (a) was acquired in 1924 in Nicaragua by Mr. D. E. Harrower. The blade is comparatively longer than in the other axes of this type and the handle is elaborately finished, being decorated with three series of longitudinal grooves. The second ax (b) is carved from a

1: Conzemius M-4, 5 (1921) 1932
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172 WRITING.—The carvings on one of the bowlders at the Kiwras Rapids on Rio Coco are said to resemble somewhat the characters of the Latin alphabet. Wickham (b: 245) heard of some "writing" on rocks of Rio Mico, which he considered—quite erroneously of course—inscriptions in Latin made by the early Jesuit missionaries. Neither Miskito nor Sumu appear to have possessed the art of writing as did their western neighbors, the Nicarao and Chorotega. According to Oviedo the two latter tribes had books of parchment made from deer skins. Picture writing was also practiced, and is still, by the Cuna Indians of Panama, as has recently been ascertained by Nordenskiöld.[29]

RUBBER COLLECTING

●314
439 In former days the Indians used to collect rubber from a wild-growing tree (*Castilla* sp.), which is found nearly all over the country. This industry started about 1860, first on Rio San Juan, and gradually spread to the remainder of the Mosquito Coast. The Indians sold their rubber to the local merchants, who generally made large advances to them. About 1912 and 1913, when the export of rubber ceased, owing to the low price caused by the large production of plantation rubber in the British and Dutch East Indies, many Indians found themselves heavily in debt to the merchants.

314 The rubber collectors or "huleros" first made a rude ladder out of the lianas that hang from the trees; this was done by tying short pieces of wood across them with the aid of smaller lianas. Later iron spurs were introduced and attached to the feet to climb the trees. With the machete they then scored the bark with cuts having the shape of the letter V, the point being downward. Such cuts were made all the way up the trunk, at a distance of about 3 feet from each other; they extended nearly round the tree, but the latter was on no account to be completely girdled. At the bottom of these series of cuts a spout was inserted to conduct the latex juice into buckets or other containers. In about half an hour all the whitish milk had run out of the tree.

Afterwards the latex was strained and caused to coagulate by the addition of an alkaline decoction made from the juice of the ohajmol vine (*Ipomoea bona-nox* L.; M.: *tatako;* T. and P.: *tutuk;* U.: *ulupuy*) or from that of a liana (*Calonyction speciosum*); this was combined with the latex in the proportion of 1 pint to 2 gallons. To prevent putrefaction coagulation must be effected within about 24 hours after the collection of the milk. The resulting mass was then made into round flat cakes, which were exported under the name "sheet rubber"

[29] Picture Writings and Other Documents. Comparative Ethnographical Studies, vol. 7, part 1 (1928) and part 2 (1930).

1: Conzernius M-4, 5 (1921) 1932
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(Spanish "torta" or "plancha"). The milk, adhering to the cuts made into the bark, blackened upon exposure to the sun and air; it was left to coagulate there, and then wrapped up in bundles separate from the other rubber. This was shipped mostly to New York, where it was known as "scrap rubber" or "picket rubber" (Spanish "burucha," the "sernamby" of the Brazilians). In later years the spot at the foot of the rubber tree was cleared and the milky juice was allowed to drop to the ground, taking its own time to coagulate. After a couple of weeks, when it was sufficiently dry, it was rolled up and made into bundles varying from 50 to 200 pounds in weight. This is the "strip rubber" of commerce (Spanish "tira" or "cuera").

When this industry started in 1860 large rubber trees from 4 to 5 feet in diameter were not uncommon. These yielded, when first cut, about 20 gallons of milk, each gallon of which furnished 2 pounds of rubber. After an ordinary bleeding the tree soon recuperates, and may be tapped again the following year. Unscrupulous collectors merely felled the tree in order to facilitate the work. By this pernicious method large trees have been made to yield over a quintal of rubber, but gradually all the big trees were killed and even specimens measuring 3 feet in diameter became rare. Many huleros then adulterated the rubber with the latex derived from the tunu tree; the resulting mixture being less elastic, and consequently of inferior quality, the product from the Mosquito Coast yielded a lower price than that from other regions of Central America.

Previous to 1860 rubber was collected in thick circular cakes, which were used only to make black paint from the melted gum.

MANUFACTURE OF BARK CLOTH

In the northern part of the Mosquito Coast a coarse brownish cloth is pounded from the inner bark of a tree closely related to the rubber tree (*Castilla* sp.). The cloth, as the tree itself, is known throughout the country by the Miskito name *tunu*,[31] while the Twahka and Panamaka call the tree *tikam*, and the finished product *amat*.[32] The tree does not grow in the region inhabited by the Ulwa, and these Indians use the bark of the rubber tree (*tas*) for the manufacture of bark cloth, which they call *tas-buana* "pounded rubber."

USES OF BARK CLOTH.—Nowadays bark cloth is made almost exclusively into "sheets" or "blankets" for the bed, and into loin cloths (M.: *palpura;* T., P.: *wah-uto;* U.: *ani*). In former days it furnished the clothing for rich and poor, although the gala dress, of men of rank at least, appears to have been of cotton.

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[31] This name is already found by M. W. (307, 308) in the form *tono*.

[32] *Amatl* or *quauhamatl* is the Mexican name for a species of fig, the bark of which was made into paper and clothing.

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.: 308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Pispis mining district, around Cucra Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-sikna;*[a] T., P.: *pransa, paransa;* U.: *ki-tisna*).

ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[a] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cunbul" (=*kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *sikna* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[35] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

FORMER ARTICLES OF BARTER.—The Miskito used to evaporate salt from the water of the sea and lagoons and collect pretty sea shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

During the latter part of the seventeenth century, and for many years following, the Miskito undertook daring sea voyages as far south as Chiriqui Lagoon in Panama, and occasionally even beyond that region. These expeditions were, however, not organized with peaceful trading in view, but for the purpose of stealing cacao from the Spanish settlers at Rio Matina (Costa Rica), and capturing Indians to be sold to the English traders of Jamaica.

PRESENT-DAY COMMODITIES.—Nowadays the Indian's wants from the outside world are many. The Miskito, who are less primitive than their neighbors, were already in commercial relations with

[35] According to G. N. Collins (see Safford in Smithsonian Report for 1916, p. 421) this use still persists in the Mexican State of Chiapas.

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kutara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsah;* T., P.: *pala;* U.: *lisu*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *ribeye* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaska*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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287 PREPARATION OF TUNU CLOTH.—The tunu tree is cut down and deprived of its bark; the latter is then soaked in water for a few days, after which the sticky gum or milk adhering to it is scraped off. The bark is then dried in the sun and kept in the hut until the women find time to pound it into cloth. In this state it is called *kusni* by the Miskito, Twahka, and Panamaka, and *kuska* by the Ulwa. As it becomes hard and shrinks considerably, it has to be submerged in the neighboring stream for a short time before the pounding of it begins. The latter operation is performed on a small log[23] (M.: *tun-dusa*; S.: *lañlañ*) with the aid of a wooden mallet having the shape of a short thick club, into which longitudinal ridges have been made at the head part. This mallet is known by the names *kakka* and *para*, after the two small species of palm, from the stem of which it is made.[24] The Miskito living around Brus Lagoon and on the lower Rio Patuca also make use of the stem of a small fan-leafed palm which grows in that region and is known to Indians and foreigners by the name "palmetto." The bark extends gradually upon being pounded, and it becomes soft and flexible. After being washed and dried, it is ready for use, and has a browniah color. In Oceania the same process is employed and a similarly shaped mallet is used to manufacture the bark cloth, known by the name "tapa," but the tree of those regions is a species of Morus.

WHITE BARK CLOTH.—A similar cloth, but almost white in color and of superior quality, is obtained by the same process from the inner bark of a species of Ficus (S.: *yakuta*, *yakanta*) and likewise from the rubber tree (*Castilla* sp.). But in both cases the manufacture of the cloth is more laborious. The cloth from these two trees is known locally as "white tunu" (M.: *tunu pihni*; S.: *yakanta*, *tas-banna*); it [754] is used by the sorcerer in connection with incantations. For this purpose the sukya marks it with designs in black and red obtained with the aid of clay, charcoal, or vegetable juices.

Raveneau de Lussan (439) mentions the manufacture by the Miskito of clothing and covers from the "bastard palm"; the present writer ignores what kind of tree is meant thereby, as no part of any palm is utilized nowadays for such a purpose.

CERAMICS

323 Pottery making is rapidly becoming a lost art among the Sumu, owing to the introduction of iron and cheap tinware, while it is entirely unknown to the Miskito of the present day. The Sumu from Rio Bocay have attained some skill in making earthenware of different

[23] According to Exquemelin (Engl. edit.: 251) the Miskito were pounding their bark cloth upon stones around 1671.

[24] It is not uncommon that the plant, which furnishes the material, gives also the name of the tool.

1: Conzemius M-4, 5 (1921) 1932
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shapes and sizes for hauling water, storing food and intoxicants, and for cooking purposes.[48]

POTTERY OBJECTS.—The various kinds of pottery vessels used for cooking and for storing liquids are known by the general name *sumi* among the Miskito, and *suba* or *san suba* among the Sumu. Some of the large jars used in fermenting intoxicants reach 4 feet in height. Griddles are unknown to the Miskito; they are called *liwa* (T., P.) and *lawa* (U.). Jugs or water jars are known as *putisa* (M.) and *sutpanak* (S.); a small bowl, which is seen chiefly at the festivals, is called *ušikra* (M.), *sumai* (T., P.) or *ušikara* (U.). Most of these vessels, especially the larger ones, are slightly pointed at the base, so that they have to be placed in a cavity of the mud floor, or they are propped with stones to keep them upright. The fruit of the calabash tree served as an early model for the pottery vessels, and several types recall the shape of that fruit. Tobacco pipes (M.: *twako mina;* S.: *aka pan, aka pana*) are also made to the present day, while pottery whistles have been found in the old burial grounds.

MOLDING.—The making of the pottery is exclusively the work of the women. Potter's clay (M.: *slaubla;* S.: *sau*), noted for its good quality, may be hauled by the Indians from a great distance. The material is broken out of the ground with the aid of a strong, pointed stick. After being cleaned of all foreign particles it is mashed with the hands and mixed with water.[49] The clay is molded by hand, for the potter's wheel, like any other kind of wheel, was unknown in America in pre-Columbian days. Smaller vessels are shaped directly out of a lump of clay placed on a heavy wooden board upon which a large bijagua leaf has been placed; this leaf is continually turned round in the process of shaping.

In case a larger vessel is manufactured, the bottom portion is likewise shaped directly out of a lump of clay, and the walls are built up, not of one continuous coil, but of several, each succeeding one adding to the height of the pot. Old broken pottery vessels clearly show the coils by which they were built up.

When the desired height has been reached, the upper edge is neatly trimmed with the aid of the fragment of a calabash shell, wherein an indentation has been made, corresponding to the contour the vessel is to receive. When the latter is partly dried, it is polished with the aid of a smooth pebble.

FIRING.—After having been allowed to dry slowly in the shade for several days the ware is placed in a fire made on the ground in

[48] The present-day Miskito rely entirely on the more convenient and durable iron cooking pots for cooking purposes, but they still obtain, by way of trade from their Sumu neighbors, large clay vessels for the storing of mishla.

[49] Wickham (c: 207) mentions the Ulwa of Rio Escondido tempering the clay by mixture with a proportion of ashes from the bark of a certain forest tree, collected and burned for the purpose.

1: Conzemius M-4, 5 (1921) 1932
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the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many parts of the Mosquito Coast, chiefly in old burial grounds, indicate a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, probably the Sumu territory, the discovery of human heads, busts or entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dŏih;* U.: *ani*), girdles or

wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawikka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [867]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

1: Conzemius M-4, 5 (1921) 1932
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this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-siksa;*[37] T., P.: *pransa, paransa;* U.: *ki-tisna*).

ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[37] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cuabul" (=*kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *sikse* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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short distance from a small creek. A picture of one of these sites is given by Spinden (536). Occasionally these antiguales are surrounded by low walls, perhaps remains of former fortifications; others again were apparently defended by ditches and perhaps by palisades also. 324 172

ANCIENT METATES.—The metates found in these deposits are supported by three long, well-centered legs, which are generally covered with geometric designs; in front there is a bird or animal head (eagle, turtle, alligator, or jaguar). The Indians occasionally dig them up to be used in their households. Some fine specimens have been broken by man or by falling trees. Giant metates, which may reach over 6 feet in length, are still found, but the sculptured head has generally been removed from them. They remind us of the wooden stools still found in the Indian dwellings and it is very likely that they were used as ceremonial seats. In the Museum of the American Indian, Heye Foundation, there is a metate from the Mosquito Coast (Hodge: 56). Several large specimens from an important site discovered near Cuera Hill (to the south of Pearl Lagoon) about 30 years ago upon clearing the land for making banana plantations are in the American Museum of Natural History. The Peabody Museum of Harvard University also owns a few metates from the vicinity of Bluefields. [531]

ANCIENT BOWLS.—Cylindrical bowls with three short legs and made from a very hard granitelike rock are also found in the above-mentioned old sites, but they are less common than the metates. Two knobs near the rim, carved into bird or animal heads, serve as handles. These bowls or vases are ornamented with geometric motives, of which the most common is the incised guilloche, or rope pattern, of either curvilinear or angular construction.

The first description, accompanied with illustrations, of these "granite vases" from the Mosquito Coast is given by Pownall (318–324, pl. XXVI), who figures three of these objects. Two of these belonged to Lord Hillsborough. One of these latter (No. 1) is very small and has an animal head on one side. The larger one (No. 2) is more interesting; it is about 12 to 15 inches in diameter and 10 inches in height, with plain legs. There are two rows of diamond-shaped ornaments on the body of the vessel; the two handles take the form of a head and a tail, but the head is partly broken off. The third vessel (No. 3) is about 10 to 12 inches in diameter and height, but at the top it is somewhat narrower; it has carved legs and two head ornaments and is perhaps the best specimen in good condition found in the country. The bowls No. 2 and No. 3 have been reproduced by Humboldt (I, p. 238, and II, pl. 39) and by Dupaix (I, div. II, 27–28, and II, suppl. pl. VII, No. 1). The illustration of No. 3 has been copied also by Bancroft (IV, 26).

1: Conzemius M-4, 5 (1921) 1932
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324 172 Pownall (319) refers to another of these bowls in the British Museum, which belonged to a collection brought from Jamaica by Sir Hans Sloane. This is perhaps the one depicted by Joyce (p. 74, pl. VI, fig. 1) which resembles No. 3 described above.

In 1921 the writer found a number of these vessels, but all badly broken up, on the right bank of Rio Paulaya. Some of them were not detached from the quarry out of which they were formed. It is, however, not known from what site the marble was quarried. Bowls of similar material and technique have also been met with in the Bay Islands and in the valley of Rio Ulua. A large specimen is in the Museum of the American Indian, Heye Foundation (Hodge: 56).

532 172 STATUES OR CARVED PILLARS.—At certain old sites may be found some high slabs of stone which were originally placed upright, reminding one of our tombstones. Nearly all of them have now tumbled down. Occasionally some greatly obliterated geometric designs, or spirals, may be found on them.[28]

Spinden (539) pictures a stela or stone pillar on Rio Tocomacho (Honduras) which is 8 feet in height and nearly a foot square. It is covered on all sides with pictographic designs, chiefly spirals and scrolls; on one of the four faces there is a grotesque figure with a reptilelike creature on its head. Such stone pillars may also be found in other parts of the Mosquito Coast, but they are not common. Large stone statues, attaining as great a height as 12 feet, are, however, the outstanding feature of the archeology of the Pacific half of Nicaragua, especially of the great lake region.

Le Baron (217–222) describes and depicts some stone ruins from the left bank of Rio Prinsapolca, about 134 miles above its mouth. They consist of three monoliths, about 8 feet high, forming a triangle; the ground between them was paved with stones. These monoliths had fallen to the ground and were broken; on some of the faces there were rude carvings, greatly obliterated.

CARVED ROCKS

212 172 Pictographs may be found on the rocks in the bed of nearly all the larger streams, generally at the rapids and falls. They must have been made many centuries ago, for they are considerably waterworn, and often may be followed easier with the finger than with the naked eye. Many of these carved rocks are visible during the dry season only and are completely under water during the rainy months, owing to the rise of the rivers. (Fig. 1.)

WHERE THEY ARE FOUND.—Such carved rocks have been observed by the present writer at different places on the Rio Coco (at Wirapani,

[28] The modern Indians have no traditions concerning these ruins found in their territory, and ascribe them to the evil spirits.

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.: 308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Pispis mining district, around Cucra Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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342 Before starting with the construction of a house the Indians cut down all the bush and clear the ground around the site. All the big trees which are liable to endanger the house in case of storms are felled. 364 Refuse is thrown into the water; pigs, dogs, and vultures act to some extent as scavengers. Crude brooms are made from various low 412 shrubs or from the fan-shaped leaves of several species of *Acanthorhiza* palms.

TYPE OF HOUSES.—Both tribes construct rectangular dwellings 342 (M.: *utla;* S.: *o, u*), which are generally rounded on the short sides in the shape of a semicircle; in recent years the regular oblong form has become more common. Among the Miskito of Honduras the elliptical and the circular type are also found.

BUILDING MATERIAL.—No remains of stone houses have been discovered in this area. The dwellings of these primitive tribes are built of perishable material. They consist of four hardwood posts (M.: *playa;* S.: *kal, rahni*) supporting a sharply sloping, well-thatched palm-leaf roof (M.: *bahna;* S.: *tun*). The eaves of the latter reach to within 4 feet from the ground, so that one has to stoop in order to get into the interior. In the primitive Sumu hut there were also one or more central posts (M.: *masa;* S.: *tun rahni*) which were generally elaborately carved. The posts are generally of ironwood (*Dialium* sp.), sapodilla (*Sapota zapotilla* Coville) or cortés (*Tecoma chrysantha* DC.). Several varieties of palms, as the cohune (*Attalea cohune*), skomphra, col de gallo or suita (*Calyptrogyne sarapiquensis*), and caña danta (*Geonoma* sp.) furnish the leaves for thatching. The latter work is made very carefully and a well-made roof lasts from 6 to 10 years without needing any repair. No nails are employed in the construction of the hut, the various parts being held together with strong lianas.

ATTIC.—Most houses are provided with a sort of cockloft, or rude attic, which is immediately under the roof. It is called *tint* by both tribes, perhaps after the English "tent." It is formed by laying split bamboo across the beams, about 7 feet from the ground. Ascent to it is made by means of a tree-ladder (M.: *mina-mañka, yamanmañka;* S.: *kalana*), consisting of a tree trunk wherein notches have been cut. Food is stored in the attic; it is also used as a sleeping apartment.

FIREPLACE.—The fire is made on the leveled mud floor, which is 354 often raised a little to avoid dampness. The hearth (M.: *pauta-wihta;* T.: *kuh-nanañ;* P.: *koh-pani;* U.: *kuh-suruka*) is formed by three logs which are placed so as to form a "Y"; they do not quite touch each other, however, but there is a free space between them, where the fire is made. These three logs (M.: *pauta yuñk;* S.: *kuh-karan, koh suru*) support the cooking vessels; as the projecting ends burn gradually away, these logs have to be pushed forward

1: Conzemius M-4, 5 (1921) 1932
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from time to time. There is no chimney in the Indian hut, the smoke (M.: *kyasma;* S.: *wayao*) being allowed to escape through the roof, which consequently presents a dark brown color. This arrangement has the advantage of driving away the mosquitoes.

MODERN HUTS.—In regions where the Indians have had much intercourse with foreigners they have improved their dwellings by the addition of side walls and by a floor of split bamboo or wood; the latter is elevated generally about 3 feet above the ground. The fireplace has then to be transferred to a small adjoining hut. In certain parts near the sea all the dwellings are erected on stilts, as the land is covered with water during the larger part of the rainy season.

In the interior the side walls (M.: *utla klar;* T.: *u dakna;* P., U.: *o itikna*) consist of a wattlework of split bamboo. The Miskito living near the seaside make use of the stem of the papta palm or the leafstalk of the siliko palm, set up vertically in the form of a stockade. This material seldom reaches as high as the roof; it is held in place by horizontally placed poles to which it is loosely tied. The coastal Miskito also employ a curious wickerwork of the split stem of the papta palm for house sides. Mud walls may occasionally be found and have been introduced by Ladinos or by the Black Carib.

Cattle and pigs are kept out of the interior by inserting several sticks crosswise in the doorway (M.: *utla-bila;* S.: *u-pas, o-pas*), or, in the case of an open shed, by building a rudimentary fence around the whole. In the more modern huts there is also a door and several windows, made of a framework of sticks, bamboo, and the like. The Indian dwelling of to-day is generally divided into two compartments of unequal size, the larger serving as living room and kitchen, while the smaller is used as dormitory.

COMMUNAL HOUSES.—Formerly long communal or multiple family houses (palenques) were used by these tribes. Now only the individual family type is met with, which may, however, also be occupied by one or two married children with their respective families. The old communal houses were divided into as many compartments as there were families. Girsewald (22) gives a short description of such a Sumu dwelling from the Waspuk River; it measured 80 feet in length and 40 feet in width and was inhabited by a dozen families. Smaller multiple family houses appear to have been used in former days by the Miskito likewise; M. W. (301) states that Sandy Bay, the most important of their villages in those days (1699), consisted of twelve straggling houses with about 400 inhabitants. Formerly, when the various Indian tribes were continually engaged in wars, this arrangement facilitated the defense of their villages.

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

2: Kirchhoff E-4 (no date) 1948
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342 time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams.

352 Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built [354] of three logs on slightly raised mud platforms inside the houses. Stored 445 near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

291 Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still [177] worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

302 Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated [301] theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

301 Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

2: Kirchhoff E-4 (no date) 1948
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142
291
411
301
501

361
342
137

PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

[P. 228 -A]

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

streams. The villages and their populations were studied from Bilwas Karma to San Carlos. (See map.) The villages themselves are perched up high on the banks so that floods will not carry them away.

Once a house site has been determined the Indians clear the bush and all large trees, that may endanger the house in case of storms, are felled. The house is usually of rectangular design. Four posts or more are used to hold up a sharp sloping thatched palm leaf roof *(bahna)*. In many houses these roofs extend to about five feet off the ground. The posts are usually of ironwood. Several varieties are used for thatching, such as the *cohune (Attalea cohune)*, *skomphora*, *cola de gallo* or *suita (Calyptrogyne sarapiquensis)* and *caño danta (Geonoma* sp.). These palm leaves may last from for to five years as a roof. Although many Indians use nails today, lianas are still used to bind these structures together. The sides of the houses may be made of split bamboo or boards. Most houses have a sort of loft *(tint)* immediately beneath the roof. It is formed by laying split bamboo or boards across the beams and is reached with the use of a ladder. Various forms of bamboo wattlework may make up the interior walls. Most of the dwellings seen have the floor elevated from the ground at a distance of three to four feet. Thus the houses appear to be set on a series of stilts.

Formerly long communal houses or multiple family houses were used by tribes. Today this practice is abandoned and the family type house is what is found. It must be noted, however, that although many houses are raised from the ground, one occasionally encounters a more primitive dwelling where the family live directly on the ground clay with just a low overhanging roof for protection. But this process can only serve as a temporary shelter since the torrential rains would quickly wash away the household effects.

Iron stoves for cooking are common in most houses and in some cases the stove is in a separate house (cookhouse). Many old crates, wooden boxes, and bamboo devices are used for tables and chairs. Beds are made of split bamboo and are raised on posts two to three feet from the floor. Recently hammocks have become popular in the area. They may be purchased from the traders or hand made with cotton, tree bark or Bromelia fibers. Small hammocks are used for children.

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SA15 Mosquito SA15

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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puhlak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *krikri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets 513 and as bed sheets (M.: *nina-pala, munta-pala;* T., P.: *dañ-rina;* U.: *dañ-paknak*); in Honduras the Miskito also use mats (*tnasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilar*, corrupted from the English; S.: *tunana*) are stuffed with cotton [824] or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses. The mosquito nets, called *pabulo* by both tribes, are made of opaque [439] cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wah*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

CRADLES.—In former days cradles (M.: *kuhsañ;* T., P.: *pala;* U.: 854 *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

STOOLS.—Low wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*) 352 with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

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Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

Weapons.—*Mosquito, Sumo,* and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque,* an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella.* Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib,* and both types are used by the *Cuna* and *Chocó.*

POLITICAL ORGANIZATION

Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

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342 Before starting with the construction of a house the Indians cut down all the bush and clear the ground around the site. All the big trees which are liable to endanger the house in case of storms are felled.
364 Refuse is thrown into the water; pigs, dogs, and vultures act to some extent as scavengers. Crude brooms are made from various low
412 shrubs or from the fan-shaped leaves of several species of *Acanthorhiza* palms.

TYPE OF HOUSES.—Both tribes construct rectangular dwellings
342 (M.: *utla;* S.: *o, u*), which are generally rounded on the short sides in the shape of a semicircle; in recent years the regular oblong form has become more common. Among the Miskito of Honduras the elliptical and the circular type are also found.

BUILDING MATERIAL.—No remains of stone houses have been discovered in this area. The dwellings of these primitive tribes are built of perishable material. They consist of four hardwood posts (M.: *playa;* S.: *kal, rahni*) supporting a sharply sloping, well-thatched palm-leaf roof (M.: *bahna;* S.: *tun*). The eaves of the latter reach to within 4 feet from the ground, so that one has to stoop in order to get into the interior. In the primitive Sumu hut there were also one or more central posts (M.: *masa;* S.: *tun rahni*) which were generally elaborately carved. The posts are generally of ironwood (*Dialium* sp.), sapodilla (*Sapota sapotilla* Coville) or cortés (*Tecoma chrysantha* DC.). Several varieties of palms, as the cohune (*Attalea cohune*), skomphra, col de gallo or suita (*Calyptrogyne sarapiquensis*), and caña danta (*Geonoma* sp.) furnish the leaves for thatching. The latter work is made very carefully and a well-made roof lasts from 6 to 10 years without needing any repair. No nails are employed in the construction of the hut, the various parts being held together with strong lianas.

ATTIC.—Most houses are provided with a sort of cockloft, or rude attic, which is immediately under the roof. It is called *tint* by both tribes, perhaps after the English "tent." It is formed by laying split bamboo across the beams, about 7 feet from the ground. Ascent to it is made by means of a tree-ladder (M.: *mina-mañka, yamanmañka;* S.: *kalana*), consisting of a tree trunk wherein notches have been cut. Food is stored in the attic; it is also used as a sleeping apartment.

354 FIREPLACE.—The fire is made on the leveled mud floor, which is often raised a little to avoid dampness. The hearth (M.: *pauta-wihta;* T.: *kuh-nanañ;* P.: *koh-pani;* U.: *kuh-suruka*) is formed by three logs which are placed so as to form a "Y"; they do not quite touch each other, however, but there is a free space between them, where the fire is made. These three logs (M.: *pauta yuñk;* S.: *kuh-karan, koh suru*) support the cooking vessels; as the projecting ends burn gradually away, these logs have to be pushed forward

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from time to time. There is no chimney in the Indian hut, the smoke (M.: *kyasma;* S.: *wayao*) being allowed to escape through the roof, which consequently presents a dark brown color. This arrangement has the advantage of driving away the mosquitoes.

MODERN HUTS.—In regions where the Indians have had much intercourse with foreigners they have improved their dwellings by the addition of side walls and by a floor of split bamboo or wood; the latter is elevated generally about 3 feet above the ground. The fireplace has then to be transferred to a small adjoining hut. In certain parts near the sea all the dwellings are erected on stilts, as the land is covered with water during the larger part of the rainy season.

In the interior the side walls (M.: *utla klar;* T.: *u dakna;* P., U.: *o itikna*) consist of a wattlework of split bamboo. The Miskito living near the seaside make use of the stem of the papta palm or the leafstalk of the aliko palm, set up vertically in the form of a stockade. This material seldom reaches as high as the roof; it is held in place by horizontally placed poles to which it is loosely tied. The coastal Miskito also employ a curious wickerwork of the split stem of the papta palm for house sides. Mud walls may occasionally be found and have been introduced by Ladinos or by the Black Carib.

Cattle and pigs are kept out of the interior by inserting several sticks crosswise in the doorway (M.: *utla-bila;* S.: *u-pas, o-pas*), or, in the case of an open shed, by building a rudimentary fence around the whole. In the more modern huts there is also a door and several windows, made of a framework of sticks, bamboo, and the like. The Indian dwelling of to-day is generally divided into two compartments of unequal size, the larger serving as living room and kitchen, while the smaller is used as dormitory.

COMMUNAL HOUSES.—Formerly long communal or multiple family houses (palenques) were used by these tribes. Now only the individual family type is met with, which may, however, also be occupied by one or two married children with their respective families. The old communal houses were divided into as many compartments as there were families. Girsewald (22) gives a short description of such a Sumu dwelling from the Waspuk River; it measured 80 feet in length and 40 feet in width and was inhabited by a dozen families. Smaller multiple family houses appear to have been used in former days by the Miskito likewise; M. W. (301) states that Sandy Bay, the most important of their villages in those days (1699), consisted of twelve straggling houses with about 400 inhabitants. Formerly, when the various Indian tribes were continually engaged in wars, this arrangement facilitated the defense of their villages.

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VARIOUS.—The products of the plantation are generally thrown on the floor or put on the tables or in the attic. Little shelves are suspended from the rafters in order to keep cooked food, meat, or fruits free from the numerous creeping and crawling insects which infest the dwellings.

Under the roof are seen the various tools, the fishing and hunting implements; they are stuck in the thatch or held in crude racks. From the rafters depend bags of pine-wood soot, bottles with red pigment, and hair oils or small *pispis* gourds (*Lagenaria vulgaris* Ser.) containing shot.

DOMESTIC UTENSILS

FIREMAKING.—Fire was produced formerly by the "twirling" method. A notch was made in a piece of wild cane and a hard-wood stick placed in the cavity. This stick was held perpendicularly and twirled rapidly round and round until fire was produced. Cotton was used as tinder. A very curious method practiced by the Sumu or Paya of Rio Patuca has been described by the Franciscan missionary Fernando de Espino.[21]

Steel and flint were introduced in early days for kindling fire, but have now been replaced practically everywhere by matches of foreign manufacture.

FIRE FANS.—In order to accelerate the flame a dozen feathers from large birds, generally the guan (*Penelope cristata*) are tied together in the shape of a fan (M.: *kusu-taya;* S.: *uhlawa*).

TONGS.—Among the Miskito of Pearl Lagoon bamboo tongs or tweezers may occasionally be seen, to pull roasted plantains, cassava

[21] Ha criado Dios en lo mas retirado de la montaña un bejuco muy largo, sin, mudos, a manera de ramas de mimbre; cogen esta y cortanla en trozos pequeños de a palmo; pónenlas al humo, y en estando bien secas, cuando han menester fuego, cogen una, y con las dos palmas de las manos la estrujan como al molinillo para hacer chocolate, y cuando ellos van que está de cierto temple, soplan una punta o extremidad y por la otra parte sale fuego, y se enciende como mecha de escopeta, porque el en si es estoposo por de dentro. De otro modo sacan fuego, que es el común de los indios, estregando un palo con otro (Serrano y Sanz: 367–368)

1: Conzemius M-4, 5 (1921) 1932
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DISHES.—Calabashes (M.: *kahmi;* S.: *sutak*) take the place of plates, cups and glasses in the Indian houses; they are made from the fruit of the calabash tree, which is cut in two equal halves, and the soft watery pulp with the seeds removed. The thin, hard, woody shell is not fragile and lasts a long time. 415

By piercing such a calabash with small holes a strainer or colander (M.: *lili;* T., P.: *lilihna;* U.: *dilana*) is obtained; this is the "chachi" of the Creoles.

Large cups without handles, and basins are bought in the local shops; they are known by the name *mak*.

Square, round, or oval-shaped wooden bowls are made by the Indians of mahogany or other woods; they are known by their English names. These bowls are thick and clumsy and shaped like shallow basins; occasionally they are provided with very short, stout legs.

VARIOUS KITCHEN UTENSILS.—Flat withe baskets (M.: *usnuñ, uslun;* S.: *uslun, wah-taina, sidan*), hanging under the roof in the smoke of the fire contain large wooden spoons (M.: *kustara*, from the Spanish "cuchara"; S.: *pan-yamna*), called "pat sticks" by the Creoles, small single-headed wooden pestles or wabul sticks (M.: *tuskaya;* T., P.: *pan-tirina;* U.: *pan-ruknaka*), cacao stirring sticks or "swizzle sticks" (M.: *purbaya;* S.: *pan-korona, pan-poronaka*). These various utensils are made from Spanish cedar, mahogany, sapodilla, or rosewood.

Iron graters are seen occasionally. The Sumu have a native name (*pān-alna*) for this implement, while the Miskito call it by its English name.

The rough leaves of a small tree (*Curatella americana* L.) and of a vine (*Davilla kunthii* St. Hil.) are employed instead of sandpaper for polishing purposes. Both these plants belong to the Dilleniaceae and are called "raspa-guacal," "hoja-chigüe" or "chumico" by the Ladinos; among the Miskito, Sumu, and Creoles they are known by the name *yahal*. 824 356

TOOLS

Before the discovery of America these Indians had few utensils and implements of stone; such articles were chiefly of wood, clay, shell, bone, etc. It would be nearer the truth to say that the Miskito and Sumu were living in the wood age instead of the stone age. Stone objects are, of course, the ones which have been preserved mostly. Fish teeth, snail and tortoise shells, quartz, flint, pebbles, and the like were used as scraping implements. Knives of bamboo are still used to sever the navel string of newborn babies. 412

MACHETE.—The machete (M., T., P.: *ispara*, from the Spanish "espada"; U.: *masat*), a heavy cutlasslike knife of about 2 feet in length, is the vade mecum of these Indians. It is their faithful

1: Conzemius M-4, 5 (1921) 1932
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and rabbits. The raccoon, the coati or pisote, the weasel, the skunk, and the kinkajou are met with in the forests and the otter exists in all the streams.

Alligators and a small species of crocodile infest the rivers, lagoons, and swamps. Several varieties of river turtles or tortoises occur, while the valued hawk's bill, the green turtle, and the loggerhead are caught in the sea. The largest lizards are the iguanas, which occur in several eatable varieties. Poisonous and harmless snakes are numerous.

Man-eating sharks and sawfishes are found in the sea and in the lower course of the streams.

The "john crow" or turkey buzzard is a useful scavenger. During the winter months many of the common North American birds arrive as immigrants and spend the cold season in this mild climate. Guans, curassows, mountain hens, wild ducks, and pigeons are esteemed as food. Trogons, orioles, toucans, tanagers, macaws, parrots, parrakeets, and humming birds make themselves conspicuous by their plumage or by their song. Flamingos, white egrets, and herons are found chiefly around the lagoons and swamps.

The mosquitoes are the propagators of malaria, while red bugs, ticks, cockroaches, jiggers, sandflies, and screw worms are largely responsible for the prevailing skin troubles.

INHABITANTS.—The humid tropical climate, combined with the jungle vegetation, have retarded settlement and the building up of a dense population. The bulk of the inhabitants of the Mosquito Coast are found along the seashore and on the lower part of the larger rivers.

Besides the *Miskito* and *Sumu*, with whom the present monograph will deal, two other Indian tribes inhabit the Mosquito Coast, the *Paya* and *Rama*. The former live in Honduras between Rio Patuca and Rio Sico. Their number is estimated at about 700 and they are dying out rapidly (vide Conzemius, b). The Rama tribe, the bulk of which lives on Rama Key in Bluefields Lagoon, numbers only about 200. Its language is of Chibcha stock and is closely allied to those spoken by the aborigines of Costa Rica, Panama, Colombia, and northern Ecuador (vide Conzemius, c). The western portion of the Mosquito Coast was formerly occupied by the *Matagalpa*, whose language has been extinct for nearly half a century; a dialect of it is still spoken to this day in the villages of Cacaopera and Lislique (Salvador). A number of other tribes have been reported from the country under consideration in former days, but as they have been extinct for some time it has been impossible to classify them. Some of the tribal designations applied by the early authors are merely derived from the rivers upon which the tribes lived.

From Rio Tinto northward along the sea and lagoons live the so-called *Black Carib* or *Garif*. These are the descendants of the

1: Conzemius M-4, 5 (1921) 1932
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TEETH.—Formerly the Sumu used to file or rather chip their teeth to sharp points; this was a laborious process and was performed by placing a dull knife against the back of the tooth, while the front of it was tapped with a stone implement.

EARS.—In 1502, on the testimony of Columbus, certain of the coastal tribes living to the west of Cabo Gracias a Dios, whether Miskito or Paya is uncertain, distended their ears to such an extent "that they might put a hen's egg into them." This statement is confirmed nearly two centuries later by Exquemelin (Sp. ed.: 185; Engl. ed.: 102; French ed.: I, 294–295), who states that the Indians of Rio Xagua (Rio Aguan) on the coast of Honduras were called by the buccaneers "Great Ears" on account of their extraordinary and large ears. Dampier (I, 32) also mentions a curious manner of ear deformation current among the Kukra of Corn Islands during the latter half of the seventeenth century. Both sexes from these islands had their ear lobes pierced during childhood; "by continually stretching with great pegs the opening became as large as a milled five-shilling piece." They wore therein round, smooth pieces of wood, "so that their ears seemed to be all wood with a little skin about them."

LEGS.—From the days of early infancy the Sumu females tie a narrow piece of cotton cloth firmly above the ankle and again below the knee. These bands, if ever removed, are immediately replaced by others. As a result of this custom the parts of the legs thus constricted are very thin, being hardly thicker than the actual bone, whereas the muscles of the calf bulge out to an abnormal degree. This custom, which was observed already by Dampier (I, 32) among the Kukra of the Corn Islands during the latter half of the seventeenth century, is also current among many Carib tribes of South America. Similar bands are occasionally worn by the females at the wrist and below the elbow, but here they serve merely the purpose of ornamentation.

VARIOUS.—Circumcision is said to have been practiced in former days by some of the Sumu tribes, but the writer was unable to obtain any details regarding that custom. Until quite recently the face of the young Sumu was also scarified.

DWELLINGS

VILLAGES.—The villages (M.: *tāuan*, from the English "town"; S.: *asaŋ*) are constructed generally along the waterways, as the sea, lagoons, or rivers, which form the principal means of communication. The Miskito of the lower Rio Coco and of certain parts of the Nicaragua coast have some large villages with from 100 to 500 inhabitants, but the Sumu settlements consist of only two to six huts and count from 6 to 25 inhabitants. On account of the danger from floods the inland villages are often perched upon high banks of the stream.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

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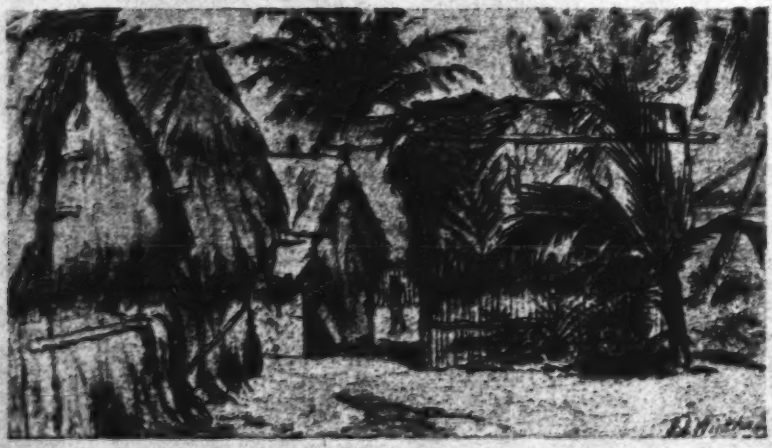

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PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

[p. 228 -A]

3: Pijoan D-5 (ca. 1945) 1946

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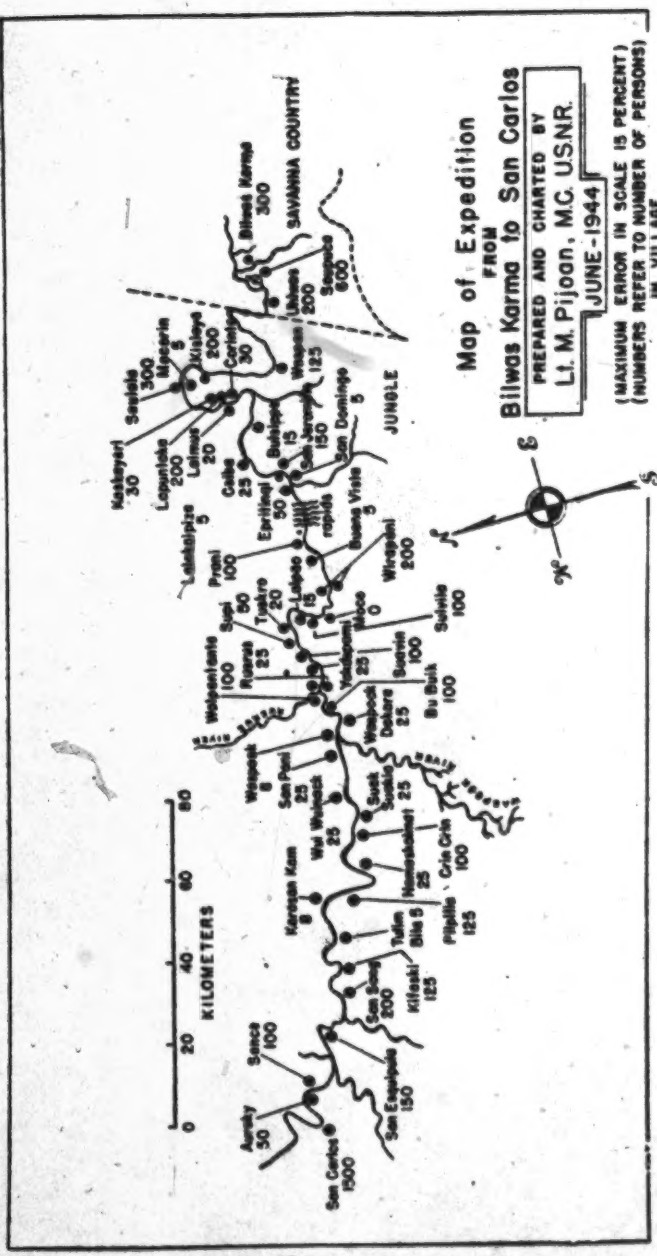

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3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

ralization can be directly applied to diets in the tropics: the galaxy of nutritional factors are determined by the local situation and the food habits of the people.

The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the western region of the Mosquito coast was occupied by the Matagalpa Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

The Miskito and small isolated bands of Suma Indians inhabit the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive additional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

3: Pijoan D-5 (ca. 1945) 1946

SA15 Mosquito SA15

The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two set seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito/SA15

of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

361 streams. The villages and their populations were studied from Bilwas Karma to San Carlos. (See map.) The villages themselves are perched up high on the banks so that floods will not carry them away.

342 Once a house site has been determined the Indians clear the bush and all large trees, that may endanger the house in case of storms, are felled. The house is usually of rectangular design. Four posts or more are used to hold up a sharp sloping thatched palm leaf roof *(bahna)*. In many houses these roofs extend to about five feet off the ground. The posts are usually of ironwood. Several varieties are used for thatching. [824] such as the *cohune (Attalea cohune)*, *skomphora*, *cola de gallo* or *suita (Calyptrogyne sarapiquensis)* and *ceña danta (Geonoma* sp.). These palm leaves may last from for to five years as a roof. Although many Indians use nails today, lianas are still used to bind these structures together. The sides of the houses may be made of split bamboo or boards. Most houses have a sort of loft *(tint)* immediately beneath the roof. It is formed by laying split bamboo or boards across the beams and is reached with the use of a ladder. Various forms of bamboo wattlework may make up the interior walls. Most of the dwellings seen have the floor elevated from the ground at a distance of three to four feet. Thus the houses appear to be set on a series of stilts.

Formerly long communal houses or multiple family houses were used by tribes. Today this practice is abandoned and the family type house is what is found. It must be noted, however, that although many houses are raised from the ground, one occasionally encounters a more primitive dwelling where the family live directly on the ground clay with just a low overhanging roof for protection. But this process can only serve as a temporary shelter since the torrential rains would quickly wash away the household effects.

352 Iron stoves for cooking are common in most houses and in some cases [343] the stove is in a separate house (cookhouse). Many old crates, wooden [354] boxes, and bamboo devices are used for tables and chairs. Beds are made of split bamboo and are raised on posts two to three feet from the floor. Recently hammocks have become popular in the area. They may be purchased from the traders or hand made with cotton, tree bark or Bromelia fibers. Small hammocks are used for children.

[373] Pine wood torches are used for illumination at night and in some cases fiber clusters are impregnated with oils or waxes and lit up. Under the roof the fishing, hunting and agricultural implements are kept.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

342 Before starting with the construction of a house the Indians cut down all the bush and clear the ground around the site. All the big trees which are liable to endanger the house in case of storms are felled. 364 Refuse is thrown into the water; pigs, dogs, and vultures act to some extent as scavengers. Crude brooms are made from various low 412 shrubs or from the fan-shaped leaves of several species of *Acanthorhiza* palms.

TYPE OF HOUSES.—Both tribes construct rectangular dwellings 342 (M.: *utla;* S.: *o, u*), which are generally rounded on the short sides in the shape of a semicircle; in recent years the regular oblong form has become more common. Among the Miskito of Honduras the elliptical and the circular type are also found.

BUILDING MATERIAL.—No remains of stone houses have been discovered in this area. The dwellings of these primitive tribes are built of perishable material. They consist of four hardwood posts (M.: *playa;* S.: *kal, rahni*) supporting a sharply sloping, well-thatched palm-leaf roof (M.: *bahna;* S.: *tun*). The eaves of the latter reach to within 4 feet from the ground, so that one has to stoop in order to get into the interior. In the primitive Sumu hut there were also one or more central posts (M.: *masa;* S.: *tun rahni*) which were generally elaborately carved. The posts are generally of ironwood (*Dialium* sp.), sapodilla (*Sapota zapotilla* Coville) or cortés (*Tecoma chrysantha* DC.). Several varieties of palms, as the cohune (*Attalea cohune*), skomphra, col de gallo or suita (*Calyptrogyne sarapiquensis*), and caña danta (*Geonoma* sp.) furnish the leaves for thatching. The latter work is made very carefully and a well-made roof lasts from 6 to 10 years without needing any repair. No nails are employed in the construction of the hut, the various parts being held together with strong lianas.

ATTIC.—Most houses are provided with a sort of cockloft, or rude attic, which is immediately under the roof. It is called *tint* by both tribes, perhaps after the English "tent." It is formed by laying split bamboo across the beams, about 7 feet from the ground. Ascent to it is made by means of a tree-ladder (M.: *mina-mañka, yaman-mañka;* S.: *kalana*), consisting of a tree trunk wherein notches have been cut. Food is stored in the attic; it is also used as a sleeping apartment.

FIREPLACE.—The fire is made on the leveled mud floor, which is 354 often raised a little to avoid dampness. The hearth (M.: *pāuta-wihta;* T.: *kuh-nanañ;* P.: *koh-pani;* U.: *kuh-suruka*) is formed by three logs which are placed so as to form a "Y"; they do not quite touch each other, however, but there is a free space between them, where the fire is made. These three logs (M.: *pāuta yuñk;* S.: *kuh-karan, koh suru*) support the cooking vessels; as the projecting ends burn gradually away, these logs have to be pushed forward

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SA15 Mosquito SA15

CHESTS.—Wooden chests or trunks, known by their English names, are used to store clothing and valuables. They may be of foreign manufacture or made locally from the Spanish cedar (*Cedrela* sp.). 352

ILLUMINATION.—Pine-wood torches are used for illuminating purposes. In certain regions where the pitch pine (*Pinus tenuifolia* Benth.) is absent or scarce the Indians make rude candles by surrounding a cotton thread with beeswax or with the gum of certain trees, as the rubber tree (*Castilla* sp.) or the locust tree (*Hymenaea courbaril* L.). Small baskets, filled with big tropical fireflies, are also used occasionally as lanterns by children. 354

VARIOUS.—The products of the plantation are generally thrown on the floor or put on the tables or in the attic. Little shelves are suspended from the rafters in order to keep cooked food, meat, or fruits free from the numerous creeping and crawling insects which infest the dwellings. 356

Under the roof are seen the various tools, the fishing and hunting implements; they are stuck in the thatch or held in crude racks. From the rafters depend bags of pine-wood soot, bottles with red pigment, and hair oils or small *pispis* gourds (*Lagenaria vulgaris* Ser.) containing shot.

DOMESTIC UTENSILS

FIREMAKING.—Fire was produced formerly by the "twirling" method. A notch was made in a piece of wild cane and a hard-wood stick placed in the cavity. This stick was held perpendicularly and twirled rapidly round and round until fire was produced. Cotton was used as tinder. A very curious method practiced by the Sumu or Paya of Rio Patuca has been described by the Franciscan missionary Fernando de Espino.[21] 372

Steel and flint were introduced in early days for kindling fire, but have now been replaced practically everywhere by matches of foreign manufacture. [[77]]

FIRE FANS.—In order to accelerate the flame a dozen feathers from large birds, generally the guan (*Penelope cristata*) are tied together in the shape of a fan (M.: *kusu-taya;* S.: *uhlawa*).

TONGS.—Among the Miskito of Pearl Lagoon bamboo tongs or tweezers may occasionally be seen, to pull roasted plantains, cassava 412

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3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

MEAT FOODS

226 A very large share of food is obtained from the sea, the lagoons, and the rivers. Larger fish are caught by throwing a spear or javelin, smaller ones with hooks or nets. Previous to the introduction of steel, the Indians fashioned their spear heads from bamboo, which was easily cut into barbs. A cord is attached to the point whereas the shaft is a solid light wood. With this device they spear the carp-like snook and the tarpon. At night fish are attracted by the use of a pitch pine torch and are also speared; turtles are harpooned. Fish are sometimes caught by "poisoning" the water. For this purpose the Indians utilize several vines; usually one which has been identified as *Seriania inebrians*. The vine is crushed with flat stones to release the poisonous milky juice. A creek is temporarily dammed and at some distance above the dam the crushed plant is thrown into de water, the fish are quickly paralyzed and are then caught by the Indians. Large fish are easily harpooned when in this condition. Smaller fish are allowed to float away and recover when they reach unpolluted water. Bows and arrows are rarely used today for fishing purposes but near mining centers fish are often dynamited; this process is to be condemned since it destroys the majority of the smaller fish.

[225] The tails of young alligators and crocodiles are occasionally eaten. Lobsters, crabs, and mollusks form an important item of food. In general, the rivers and lagoons afford an ever present, easily obtainable source of food.

224 With muzzle loading and other equally out-of-date shotguns, the Indians hunt game. Spears, bows, and arrows are occasionally used but the blowgun is no longer used. Game is found in abundance along the margins of the rivers. Deer, Peccary, spider monkey and capuchin monkey, tapir, lizards and a variety of birds, including parrots, red-spoonbills, curasows, mountain hens, quail, partridge, pigeons and a number of wild ducks, are used for food. In addition to the wild game, the Indians raise and eat some domestic cattle, pigs and chikens. There is no lack of meat of one form of another. It is often preserved by drying and smoking it for several days over a dull fire, since the humidity is too high for sun drying. Salt is used sparingly by the Indians.

FOOD PREPARATION AND CONSUMPTION

● 373 Fire is a necessity for cooking, for without it the Indians would have to subsist on raw foods. Fire is produced by twirling a hardwood stick in a notch of wild cane. When smoke appears a piece of wild

3: Pijoan D-5 (ca. 1945) 1946
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cotton fluff is placed in the notch and the twirling continued. Several 373
fragments of the cotton begin to glow and these are fanned into flame. Today, many Indians use matches but the primitive method of making fire is still used to a great extent. Many of these fires may have been started a generation or more ago. They are tended or kept burning in iron or stone cooking ovens within the houses.

Many of the Miskito use bamboo tongs or tweezers to pull roasted 415
plantains, cassava, and other foods out of the hot ashes. The Miskitos use large wooden mortars *(uno, no)* and hard wooden pestles *(una, mihta)* to pound grains and fruits. The pestle is single headed and tapers toward the handle end. The Sumu Indians on the other hand use a metate and mealing stone for grinding maize and cacao. Light iron tripod post (*dikwa*) are found in every household, and have replaced earthen vessels for cooking purposes. Large calabashes with a small hole in the apex, just large enough to insert a finger, are the common water canteens *(kahmuntara)*. Segments of a large species of bamboo are also used to haul water in certain areas. They are made from a section of the bamboo stem cut so that a nodal septum serves as a bottom. The stem may be cut off immediately below the next septum or it may be cut outside of each septum to convert it into a small barrel. A hole is then drilled for filling and a plug inserted.

Fermented beverages are stored in large earthen vessels *(sumi)*. Plates, cups and glasses are made from the calabash *(kalmi)* fruit, which is cut and the soft watery pulp and seeds removed. Square, round, or oval shaped bowls are sometimes made of mahogany and other woods, but calabash bowls seem to be preferred. A variety of wooden spoons, pat sticks, and stirring sticks are also used. A primitive sugar mill *(tranko)* is employed to squeeze the juice from sugar cane.

It has been observed that the Miskito Indian has an enormous ap- 264
petite. At some meals he may take as many as a dozen helpings. On the other hand he may go days with hardly any food at all, specially during inclement weather, or during a hunt or a long travel. Generally, the women do the cooking, the men only on trips away from home. No regularity is observed in eating, most of the Indians eating whenever they are hungry or after hunting. They usually have one meal in the early morning and one at night before retiring. There is no midday meal. When a meal is ready the grownup men are served first with the best and largest shares. A calabash of soup or stew is usually served first. Salt if available is eaten separately. The women and children eat together. Indians rarely speak during a meal, and a visitor is never questioned while he too should remain in silence, since to do otherwise would be a breach of etiquette.

1: Conzemius M-4, 5 (1921) 1932
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OTHER HANDICRAFTS

283 BARK FIBERS.—From various trees known locally as "mahoe" or "majagua" (M. and S.: *sani*, *wahpi*, *wahmatis*, *tāitu*) the Indians obtain strong bark fiber (M.: *sani;* S.: *wahso*). The best fiber from these trees is pulled off, split, cut into many threads of the desired size and made into ropes and cordage, hammocks (M.: *silmika;* S.: *wah*), matates or carrying bags (M.: *kūa;* T., P.: *wili;* U.: *wali*). These articles are colored with native bark dyes. The carrying bags are of various sizes and consist of coiled work without foundation; they are furnished with a head strap woven of one piece with the bag.

Bast fiber is also the common tying material of the Indians, and a supply thereof may always be found in the huts. It is also used as pack straps, which are put around the forehead and support the load carried on the back.

PITA FIBER.—Pita or silk-grass fiber (M.: *kara;* S.: *awa*) is employed for similar uses as bast fiber, and the articles made from it are practically indestructible. It is also made into fishlines, fish nets, and bowstrings, and used to repair shoes. Its extraction is very laborious. The pulpy covering surrounding the fibers is removed by scraping the surface of the leaf on a flat board with the aid of a machete or heavy iron knife. The fibers, which are thereby exposed, are then loosened and easily pulled from their bed by rubbing them crosswise of the leaf with the leaf pressed down upon the flat board. They are then washed to remove any adhesive pulp, dried, and rolled on the thigh into twine.

285 BASKETRY.—Basketry is not highly developed, although in such a well-watered country as the Mosquito Coast there is no lack of palms, vines, creepers, and epiphytic plants which may be used in basketwork. Certain vines are used in tying material, especially in the construction of the dwellings. The carrying bag of bark fiber or pita fiber takes to a large extent the place of baskets. From *wari* withes is made a round basket (M. and S.: *uslun*, *usnuñ*), which is used to store calabashes and other small kitchen utensils. Other types made by the Sumu are called by these Indians *wah-tāina* and *sidan*. A large waterproof basket, known locally by the name *pataki*, is obtained in trade from the Black Carib; it is made from *siwa* withes.

281 177 LEATHER WORK.—The art of tanning has apparently been learned from the whites. The bark of numerous indigenous trees is used by the Indians for tanning purposes. Leather is used nowadays for drumheads, masquerade dresses, sandals, moccasins, crude saddles, and belts.

●383 RUBBER INDUSTRY.—Some of the Indians have learned the process of hardening the milk of the rubber tree (*Castilla* sp.) by treating

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsañ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasañka*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. & S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakwa;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

1: Conzemius M-4, 5 (1921) 1932
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the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *awal-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[29]

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tiñ-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quarts, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

[29] According to Bell (b: 155) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

3: Pijoan D-5 (ca. 1945) 1946
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from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)* The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tiswat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melaneccoca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

1: Conzemius M-4, 5 (1921) 1932
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that in former days the Miskito made rude canoes of plaited withes and made them waterproof by smearing a thin layer of clay over them. The Ladinos have corrupted the name into "pipante." The Miskito of the upper Rio Coco, who know no other boat but the pitpan, apply the name *dori* or *duri* nowadays to a keeled or unkeeled canoe, but among their kindred living near the sea this word is restricted to the former type. In all Sumu dialects both types are called *kuriñ*.

BATEAU.—A large form of pitpan, known by the French name "bateau," is generally used to transport cargo on the rivers of the Mosquito Coast. It is made by enlarging an ordinary pitpan. The latter is cut lengthwise in two halves of equal size; boards are then inserted, and the two parts are joined again. The sides are also raised. Such bateaux are generally manned by six paddlers and take about 5,000 pounds of freight. On some of the larger rivers there are operating some bateaux measuring up to 60 feet in length, 4 to 6 feet in width, and taking up to 100 Spanish quintals (say, 4,600 kg., or 10,145 English pounds) of merchandise. These are manned by from 10 to 12 Indians. A small cabin or "carroza" for the passengers is made immediately in front of the captain's seat, who steers the boat from the stern with the aid of a gigantic paddle. Such a cabin may be made of canvas cloth or merely of bamboo and large leaves; it affords protection from rain and sunshine.

MAKING OF A DUGOUT.—The manner of cutting trees and hollowing them out in former days was evidently that practiced in other parts of the New World before the arrival of the Spaniards. A ring was made with the stone ax through the bark and base of the tree, thus causing it to dry. Then fire was applied, and the wood was cut away as it charred. This process was repeated until finally the tree was felled. The hollowing out of the stem was also effected by alternately applying fire and the stone ax. Water was always kept at hand in order to quench the fire so as not to waste more wood than was necessary.

The width of a dugout is enlarged after it has been filled with water during a number of days; it may then easily be stretched and widened by inserting sticks. In former days rough dugout canoes used to be furnished by some of the Sumu tribes as a sort of tribute to the King of the Miskito.

TREES USED IN CANOE MAKING.—Following is a list of the various trees which are made into canoes by the Indians under consideration:

Mahogany (M. and S.: *yulu; Swietenia macrophylla* King) is the tree most commonly used, as it is very abundant on the Mosquito Coast; canoes from this wood are very durable, but rather heavy, and they are often attacked by boring worms.

Cedar (M.: *yulam, wiñkur;* S.: *subun, wiñkur; Cedrela* sp.). Canoes hollowed out from this tree are very light and comparatively du-

1: Conzemius M-4, 5 (1921) 1932
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396 rable; the wood splits easily, but it has the advantage of not being subject to the attack of worms.

824 The guanacaste tree (M. and S.: *tuburus; Enterolobium cyclocarpum* Griseb.) is the one preferred by the Black Carib for the making of canoes; they allow the tree to "season" on the ground for a few months before starting to hollow it out. The wood is as light as cedar.

From the silk cotton tree (M.: *sisin;* S.: *panya, paniki; Ceiba pentandra* Gaertn.) very large dugouts may be made, but its light, whitish wood is not durable. Owing to certain superstitions regarding this tree, it is rarely used in boat making. (See Religion, etc.)

Saba (M.: *swa;* S.: *saba; Carapa guianensis* Aubl. or *Guarea caoba* C. DC.). The wood from this tree can scarcely be distinguished from mahogany in color and general appearance, but it is less durable.

Santa Maria (M. and S.: *krasa; Calophyllum brasiliense* var.) is seldom used, and it is suitable only for small canoes, as the tree does not attain such a great size as the aforementioned varieties. The wood is very durable, but it is rather heavy.

Emery (*Vochysia hondurensis* Sprague) is occasionally made into dugouts in the southern section of the Mosquito Coast. The wood resembles that of the silk cotton, but it is more lasting. It has, however, the disadvantage of soon becoming water-logged; besides, it rots immediately where a nail has been driven in.

The banak or cebo tree (M. and S.: *banak; Virola merendonis* ?) is a large tree which is also occasionally made into canoes.

501 CANOE POLES.—Canoes are propelled by long poles or by paddles. The poles (M.: *kahra, kahara;* T.: *kaha pan;* P.: *kaha pana, kuriñ pana;* U.: *pan sañ*) are used in shallow water with rapid current and hard bottom. In a small "cranky" pitpan this method of travel is not agreeable, especially to a newcomer; each time the boatmen, who stand up at the bow, push with their poles, the canoe begins to lurch as if it was going to upset. The captain sits at the stern and steers with a paddle.

PADDLES.—The paddles (M.: *kwahi;* T. and P.: *kawâi;* U.: *wâihna*) are broad bladed and made generally of mahogany or cedar. They measure from 4 to 5 feet in length and are often roughly polished. Larger paddles are also used, especially by the steersman, for the propelling of the bateaux. At its upper extremity the paddle terminates into an enlargement or "ear" (M.: *kyama;* S.: *tapani, tapaka*), which serves as grip to one hand, while the other hand grasps the paddle about 2 feet farther down. The paddles are moved vertically along the gunwale of the boat, the blade forcing back the water with main strength applied and very quick strokes.

SAILS.—In former days the Miskito are known to have employed sails (M.: *kwaltara;* T., P.: *asna nohni;* U.: *asna nohka*[35]) of native

[35] These names literally mean "large cloth."

1: Conzemius M-4, 5 (1921) 1932
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316 this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

381 439 411 Cheap bracelets, earrings, and finger rings of foreign origin are now very common among both tribes. The iron and steel objects, which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

324 METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-siksa;*[37] T., P.: *pransa, paransa;* U.: *ki-tisna*).

324 172 ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[37] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cusbul" (= *kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *siksa* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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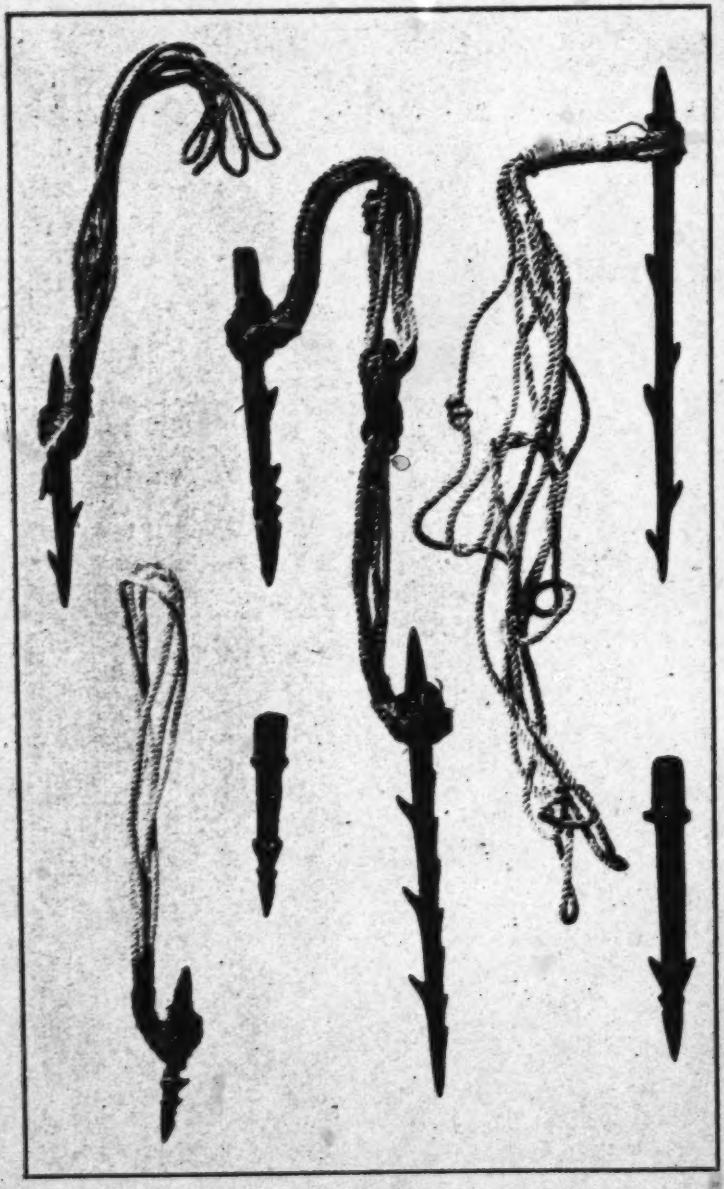

HARPOONS MADE FROM TRIANGULAR FILES.
Mikiito.

[p. 54 F]

1: Conzemius M-4, 5 (1921) 1932
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(*Ananas sativus;* M.: *pihto;* S.: *masa, masahti*),[46] papaws or papayas (*Carica papaya* L.; M.: *twas, tawas;* S.: *ulmak, ulumak*), avocados or alligator pears (*Persea gratissima* Gaertn.; M.: *sikya;* S.: *sikya, sariñ*), soursops (*Anona muricata* L.; M.: *dwarsap;* S.: *sapot*), guavas (*Psidium guajava* L.; M.: *sikra;* S.: *burimak*), cashews (*Anacardium occidentale* L.; M. and S.: *kasaa*), and watermelons (*Citrullus vulgaris* Schrad.; M. and S.: *rayapisa*). Spanish plums (*Spondias purpurea* L.), although apparently indigenous, are rarely found, and their Indian name *ploms* comes from the English language.

The most important fruit trees of foreign origin are: Citrus fruits (oranges, lemons, sweet limes, sour limes, shaddocks, grapefruits, citrons), mangoes (*Mangifera indica* L.), breadfruits (*Artocarpus communis* syn. *incisa*), tamarinds (*Tamarindus indica* L.), and rose apples (*Eugenia jambos* L.).

GARDENS.—Around their houses many Indians cultivate also a few fruit trees and other plants. The calabash tree (*Crescentia cujete* L.; M.: *kahmi;* S.: *sutak*) is very common in these gardens; it is esteemed for the very useful kitchen receptacles obtained from its fruit. A few bushes of cotton (*Gossypium peruvianum* Cav.; M.: *wahmuk;* S.: *wahmak*), chile peppers (*Capsicum* sp.; M.: *kuma;* S.: *anmak, añmak*) and annatto (*Bixa orellana* L.; M.: *aulala, tmariñ;* S.: *awal*) are found near every lodge. A number of flowers are also cultivated, as the African marigolds, purple and white four-o'clocks, and the crimson hibiscus.

FISHING AND FISHING IMPLEMENTS

A very large share of the food supply of these primitive Indians is obtained from the sea, the lagoons, and the rivers. Fishing is therefore an occupation wherein both tribes have attained an unusual degree of skill. The main implements used for this purpose are harpoons, fishhooks, nets, and bows and arrows.

JAVELIN.—The javelin or throwing spear (M.: *wañsku;* S.: *sukruk*) is used in the sea, lagoons, and larger rivers. It consists of a wooden staff, from 8 to 9 feet in length, in the front end of which a sharp barbed steel head has been inserted. The staff is of strong, slender, light wood, generally of a tree called "magaleta" (M.: *sihnak, sinak;* S.: *sina*); the Ulwa, however, use for this purpose the wood of a tree called by them *pan-kuba*, which is said to be superior to the above-mentioned species. The loosely fitting steel point is from 4 to 5 inches long and is made of an old file, wherein several series of double

[46] The old authors, Exquemelin (Engl. edit.: 251), Dampier (I, 9), and M. W. (308, 310), met this fruit among the Miskito during the latter part of the seventeenth century; in those days it was also cultivated by the aborigines of the Corn Islands (Exquemelin, Engl. edit.: 114).

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441 barbs have been made with the aid of another file. Previous to the introduction of iron and steel the Indians made their spear points of pointed and barbed pieces of bamboo. A cord about 50 feet in length is attached to the point, while the other end of it is wound round a long reel of light wood, which acts as a "bob" or float, and is stuck at the distal end of the staff. These Indians call the float *kunkun*, which name is also applied by the Sumu to the balsa tree (*Ochroma lagopus* Sw.), from which it is usually made. Sometimes the red cedar (*Cedrela* sp.) or the roots of the "bobwood" tree (*Anona palustris*) are employed for this purpose by the Miskito.

The javelin is used only for the larger fishes, such as the carplike snook (M. and S.: *mopi*) and the salmonlike tarpon (M. and S.: *tapam, tahpam*) which are frequently met with in the larger rivers.

226 Two men generally work together when fishing with this implement. The one in the bow of the boat signals his companion how to steer by motioning with the hand. They glide noiselessly over the water, and when within reach of a fish, that is, about 60 feet distant from it, the bowman stands up with the spear in his right hand and aims and throws at a single fish, which he may be unable to see through the thickness of water. The only thing visible is the fish's "wake," that is, the ripple produced on the surface of the water as he swims lazily along. By that the Indian guesses the species of the fish as well as the depth at which he swims under water. It may be 2 feet. The spear is thrown in such a manner that it strikes the water almost vertically; the Indians seldom miss, for they have practiced this sport from early childhood. Upon striking the fish, the cord unwinds; harpoon and reel become detached from the staff, but they are attached to each other by the cord. The reel acts like a float and points out the whereabouts of the prize; with its aid the latter is secured. When the fish is tired, it is drawn near the canoe, killed with a stick, and hauled in. Then the staff, which is also of floatable wood, is likewise caught.

At the beginning of the rainy season the Miskito also practice this sport at night, especially in the lagoons. At such places where the fresh water comes in contact with the sea water it blazes as the fish swims along, thus indicating the latter's presence.

On dark nights the fish is also speared with the aid of a pitch-pine torch which is held by a third man in the boat. The glare of the torch attracts the fish and enables the bowman to spy his prey, which is immediately transfixed by the harpoon. This sport of fishing with a torch is practiced chiefly in November and December.

[171] The Sumu seldom employ this fishing implement as it is of little use in the small rocky streams where the bulk of this tribe lives. On the other hand, many Creoles and Ladinos living on the coast have learned from the Indians how to handle it.

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They are caught with the hook or by diving after them; some Indians will also catch the sea turtles in this manner and bring them up in their hands, but this feat is attended with danger, from bites and sharp coral. The bocatora tortoise is speckled black and yellow and is found in the larger rivers only. It lays about 20 round eggs in the sand, silt, or even in stiff earth; the eggs are inclosed in a rough calcareous parchment and are considered a great delicacy.

LANCES.—Two varieties of long spears, with fixed points, are employed for striking fish. They are not thrown, but kept in the hand while striking. These implements are found chiefly among the river Indians, Miskito as well as Sumu. The thin, strong staff, which may be from 10 to 15 feet in length, is made from the stem of a tree called by the Ladinos "cacao" (M.: *sakalpihni;* S.: *babasnak*). Of these two implements the more common one (M.: *sihnak;* S.: *sukruk*) has a harpoonlike point, similar to that of the javelin or throwing spear. The other one (M. and S.: *daka*) is provided with a pointed piece of thick wire or some other metal, which looks like a nail; for that reason it is called "clavo" by the Ladinos, who also use it in fishing.

FISHHOOKS.—Fishing with the hook (M.: *kyul;* T., P.: *kuyul;* U.: *simin*) is done chiefly by the women, children, and old men. The line is made of silk-grass fiber (*Bromelia* sp.) and is dyed black with vegetable juices, so as to render it less conspicuous. The hooks are of foreign manufacture but in former days crooked bones were used for the purpose. The Indians bait them with worms, spiders, grasshoppers, or fruits (guavas, wild figs).

At certain times of the year when the fruits of the wild fig or of other trees growing along the edge of the river begin to drop, the Indians fish without any bait at all. They flick and cast their long line about, lashing the surface of the water, and letting it sink, presently raising it with a peculiar movement of the wrist. This noise is regarded by the fish as resulting from the dropping of overhanging fruits and they will greedily snap after them and then be caught by the hook.

FISHING NETS.—A small fishing net (M.: *ilis, tan;* T.: *wilino;* P.: *dus;* U.: *yano*), made of silk-grass fiber, is used by both Miskito and Sumu. With its aid they close the mouth of narrow creeks, in order to catch the fish trying to enter the main river. Wickham (b: 238; c: 203) already mentions the use of drag nets among the Ulwa of Rio Escondido; the Indians employed it in low water in the pools scattered among the bowlders or rocks in the rapids and falls.

The cast net and the seine have also been introduced recently among the Miskito. The former especially is becoming popular. Having the folded net in his hand, the Indian throws it like a lasso upon the water in such a manner that by a single cast it becomes suspended almost to its whole width, surprising and catching the

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *triru*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

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411 278 171 language, and gives this name also as that of an island among the Mosquito Keys.

The secretions from an indigenous pale greenish-blue frog (*Dendrobates tinctorius*) may also have been used as an arrow poison, as is done by several tribes of Colombia.

411 LANCES AND SPEARS.—Lances and spears, tipped with fishbones or with flint, were formerly used for hunting and fighting, but to-day they are employed exclusively in fishing. (See Fishing and Fishing Implements.) Ferdinand Columbus mentions these weapons and says that they were made of palm wood, black as coal and hard as horn, and pointed with the bones of fishes. The javelin or throwing spear is evidently the weapon mentioned in old Spanish documents under the name of "vara para tirar." According to Exquemelin (Engl. edit.: 114) lances of a fathom and a half in length and tipped with a crocodile tooth were one of the principal arms of the aborigines of the Corn Islands.

SLINGS.—Small slings (M.: *prâûprâûkya*) for throwing stones are sometimes employed to kill birds.

CLUBS.—Wooden clubs (M.: *dyara prukaya;* T.: *di bâûnin;* U.: *dibâûnaka*) jagged with alligator teeth constituted a dangerous weapon in former days, but they disappeared many years ago.

BOW AND ARROW.—Bow and arrow appear to have been the principal weapon of the tribes under consideration; still they are said to have been unknown to the natives of the Corn Islands, who apparently belonged to the Kukra, a subtribe of the Sumu (Exquemelin, Engl. edit.: 114). It is known, however, that the Kukra living on the shores of Bluefields Lagoon possessed arrows, and a description thereof has been left to us by the same author, Exquemelin, whose vessel anchored at that lagoon in 1671. One morning several women slaves from this buccaneer vessel were attacked by a group of Indians and pierced by a great number of arrows. The latter were made of palm wood, 8 feet in length (5 to 6 feet according to the French edition), round in section and of the thickness of a thumb. They were tipped with sharp points of flint which were tied firmly into the arrow together with a wooden hook, so that the arrow point presented a harpoonlike appearance; the other extremity ended in a point. Other arrows had at the distal end a small wooden box, 1 foot long, filled with round pebbles, evidently in order to increase the power of the arrow. The Indians had been careful enough to put some leaves in this box in order to reduce the noise produced by the pebbles upon shooting the arrow off. Some of these arrows were painted red (Exquemelin, Engl. edit.: 247–248; Span. edit.: 446; French edit.: II, 257–258).

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There is no record of these Indians affixing feathers to their arrows, nor is there any other method known among them to guide their direction.

Nowadays the Miskito do not make use of bow and arrow, except for fishing. The elder Sumu still prefer these arms for hunting, as they do not make any noise and do not scare the game in the neighborhood as is the case with firearms. The lower end of the arrow is seized with the thumb and forefinger of the right hand, while the left hand is placed upon the bow and serves to direct the arrow and help in spanning the bow also.

Bow.—The bow (M.: *pantamañka;* T., P.: *las;* U.: *sibañ oka* "arrow house") is made of the hard wood of the pejivalle palm or of the cortes (*Tecoma chrysantha* DC.). It is roughly polished and flattened, with a rectangular or oblong cross section. It is widest in the center (about 1 inch) and becomes gradually narrower toward both extremities. It is of uniform thickness—that is, about a quarter of an inch—while the length varies from 4 to 5 feet. The bowstring (M.: *pantamañka awa;* T., P.: *las wahni;* U.: *sibañ wahka*), which is made of silk-grass fiber, is fastened to the tips at both extremities of the bow and is always kept rigid.

Arrows in general.—The arrow (M.: *trisba;* S.: *sibañ, sikarna*), like the bow, is made of the wood of the pejivalle palm. It is always round in section and of nearly uniform thickness; at the front end, however, it is gradually tapering and terminates in a point. The other extremity is inserted into a shaft of wild cane and firmly held in place with the aid of silk-grass fiber. In the distal end of the hollow shaft small pieces of wood are inserted, and then likewise some thread is wound round tightly in order to avoid splitting or any other damage liable to be caused by friction against the bowstring. Native beeswax (M.: *blas;* S.: *balas*) is applied to the string; it acts as a cement and protects the latter from sun and rain, which would cause it to become slack.

The wild cane (M.: *yahurus;* S.: *dapa*), which is to be used for arrow shafts, is cut immediately after flowering—that is, about August or September. The upper part or flower stalk only is employed. It is first placed in the fire for a few minutes in order to render it more pliable and facilitate the straightening of it. The Indians carefully test the straightness and balance of the reed by looking along it while held at arm's length. After this operation the cane is left to dry and harden in the sun. The reeds are then tied in bundles and kept under the house rafters, over the smoke of the fire, until needed; this makes them immune from boring insects and worms.

Fishing arrows.—There are various sorts of arrows. The simplest one, called *slauni* by the Miskito and Creoles and *sikarna* by the Sumu (*pan subañ* in the dialect of Rio Patuca), which is only

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411 used for fishing, consists merely of a shaft of wild cane into which a sharply pointed foreshaft of pejivalle wood, hardened in the fire, has been inserted and firmly tied as stated above. The latter is smoothed with the aid of a machete or large knife, which tools are used after the manner of a carpenter's plane. This kind of arrow is the largest one found on the Mosquito Coast, and it may reach 6 feet in length. Occasionally it is jagged on either side into more or less definite barbs. The arrow does not sink, owing to the feather-light shaft, which will always rise to the surface. On the Mosquito Coast the use of this arrow has also spread to some of the Creoles and Ladinos.

HUNTING ARROWS.—The hunting arrow (M.: *trisba;* S.: *sibaŭ*) measures only 5 feet in length, as the shaft of wild cane is considerably shorter than in the one used for fishing. Unlike the latter, the hardwood foreshaft is not pointed, but a piece of iron or steel made from barrel hoops or other scrap iron is inserted in front. The latter is lanceolate in shape and has sharp edges. As the art of melting metal is unknown to these Indians, they make these arrow points with the aid of files. According to Exquemelin (Engl. edit.: 251), the Miskito in 1671 used iron points or alligator teeth to tip their arrows. Flint, obsidian, turtle shell, sharp fishbone, and shark teeth [47] were also used for this purpose in former days. Barbed arrows and trident or composite arrow heads are now unknown.

BIRD ARROWS.—For birds and small animals the Indians make use of small arrows with blunt knobs of hardwood or beeswax, called *uru* by the Miskito and *ubo* or *ubur* by the Sumu. With these arrows they seldom kill, but merely stun the game, so that they can capture it alive. They are also used in the houses to scare away dogs, pigs, and fowls without being compelled to get up from the seat.

QUIVERS.—Quivers (M.: *trisba taya* "arrow skin") were apparently of ceremonial use only, and they were employed to carry the arrows during the festivals. They were made of red deerskin, as is indicated by their Sumu name (T.: *sana untak;* P.: *sana onitak;* U.: *sana okatak*). At the present time quivers have disappeared entirely, and the arrows are always carried in the hand by the hunter.

FIREARMS.—The buccaneers of the latter half of the seventeenth century apparently introduced firearms among the Miskito.[48] In

171 [47] The Rama still employ shark teeth to tip their hunting arrows, and they claim that a wound caused with such an arm will almost invariably be fatal.

175 [48] It is possible that firearms were already introduced among the Miskito at an earlier period, during the years 1630 to 1641, when the two islands of Providencia and Santa Catalina, situated off the Mosquito Coast, and now belonging to Colombia, were colonized by English Puritans. The latter opened friendly and commercial relations with the Miskito, who were living chiefly around Cabo Gracias a Dios and Sandy Bay in those days. In 1633 a certain Capt. Sussex

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recent times this arm has also spread to the Sumu. The Indians use muzzle-loading shotguns, called *raks* or *rakbus* by the Miskito and *arakbus* or *arakbas* by the Sumu. These names are evidently of European origin and are taken from the English "harquebus" or the French "arquebuse," or perhaps the Spanish "arcabuz." Powder is known by its English name (*pâûtar*), but shot, which is generally kept in the small *pispis* bottle gourd (*Lagenaria lagenaria*), is spoken of by the Indians as the "eggs of the shotgun" (M.: *raks mabra;* S.: *arakbus suma*). Double-barreled guns (M.: *raks sutki;* S.: *arakbus sutki*, that is, "twin guns") are also occasionally met with.

THE CHASE

SKILL IN HUNTING.—Game is very abundant in this sparsely inhabited part of Central America. The Indian is an excellent hunter; the keenness of his senses is marvelous and nothing escapes his eyes. Every sound is noticed and understood, and the distance and the direction whence any noise proceeds is estimated with surprising accuracy. The Indian has a marvelous instinct which permits him to discover with great ease the footprints of animals and then determine the species to which they belong. He pursues the game through the thicket with the sagacity of the bloodhound.

A MALE OCCUPATION.—The wife never accompanies her husband on the actual hunt, where she would be in his way, for she does not learn to handle any arms. When a number of men organize a hunting party, expected to last more than a day, they may be accompanied by the members of their family. Arrived at a place said to be rich in game, they erect temporary sheds, wherefrom they undertake smaller expeditions in different directions. The hunters start out early in the morning, and before nightfall they rejoin the women and children, who have been left behind at the provisional ranch. The best time for hunting is in the morning before 9 o'clock and in the evening after

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Camock, a member of that Puritan colony, appears to have founded a settlement at Cabo Gracias a Dios. Having gained the confidence of the Indians, the son of one of their most important chiefs was taken to England, where he remained two years, a certain Colonel Morris remaining as hostage among the Indians. Some of these Indians went occasionally to Providencia, where they learned English and were instructed in the Christian religion (Sloan, a: pp. LXXVI-LXXVII; Bridges: II, 138–139). In 1641 this Puritan colony, which by that time had found it more profitable to take up privateering than to pursue the peaceable occupation of farming, was stamped out by a Spanish expedition; the settlers then left for other regions, chiefly to the Bahama Islands.

According to Exquemelin (French edit.: II, 277), who wrote in 1678, the first buccaneers, a French vessel, anchored at Cabo Gracias a Dios 60 years previously—that is, about 1618—and entered into friendly relations with the Indians; the buccaneers would seem, therefore, to have been the first Europeans with whom the Miskito became friendly.

2: Kirchhoff E-4 (no date) 1948
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Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulva*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

List of Foods Grown by the People in the Caribbean Lowlands:

American origin:
- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Eddoe (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Bean (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Pataste.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Usi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

Foreign Origin:
- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

Fishing.—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

2: Kirchhoff E-4 (no date) 1948
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Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

Weapons.—*Mosquito, Sumo,* and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque,* an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella.* Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib,* and both types are used by the *Cuna* and *Chocó.*

POLITICAL ORGANIZATION

Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

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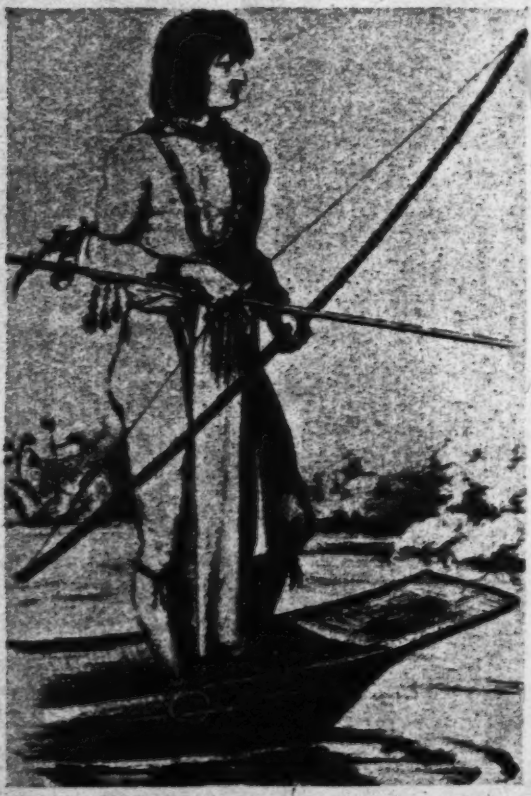

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PLATE 35.—Sumo and Mosquito Indians, Nicaragua. *Top: Sumo* man. *Bottom: Mosquito* village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

[p. 228-A]

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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic earrings (M.: *kyama-kula, kyama-dusa, kul-dusa, bapriñ;* S.: *tapana*) and finger rings (M.: *mat-diñka, mihta-diñka;* S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths.

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives.

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females.

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus;* P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing.

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

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342 Before starting with the construction of a house the Indians cut down all the bush and clear the ground around the site. All the big trees which are liable to endanger the house in case of storms are felled. 364 Refuse is thrown into the water; pigs, dogs, and vultures act to some extent as scavengers. Crude brooms are made from various low 412 shrubs or from the fan-shaped leaves of several species of *Acanthorhiza* palms.

342 TYPE OF HOUSES.—Both tribes construct rectangular dwellings (M.: *utla;* S.: *o, u*), which are generally rounded on the short sides in the shape of a semicircle; in recent years the regular oblong form has become more common. Among the Miskito of Honduras the elliptical and the circular type are also found.

BUILDING MATERIAL.—No remains of stone houses have been discovered in this area. The dwellings of these primitive tribes are built of perishable material. They consist of four hardwood posts (M.: *playa;* S.: *kal, rahni*) supporting a sharply sloping, well-thatched palm-leaf roof (M.: *bahna;* S.: *tun*). The eaves of the latter reach to within 4 feet from the ground, so that one has to stoop in order to get into the interior. In the primitive Sumu hut there were also one or more central posts (M.: *masa;* S.: *tun rahni*) which were generally elaborately carved. The posts are generally of ironwood (*Dialium* sp.), sapodilla (*Sapota zapotilla* Coville) or cortés (*Tecoma chrysantha* DC.). Several varieties of palms, as the cohune (*Attalea cohune*), skomphra, col de gallo or suita (*Calyptrogyne sarapiquensis*), and caña danta (*Geonoma* sp.) furnish the leaves for thatching. The latter work is made very carefully and a well-made roof lasts from 6 to 10 years without needing any repair. No nails are employed in the construction of the hut, the various parts being held together with strong lianas.

ATTIC.—Most houses are provided with a sort of cockloft, or rude attic, which is immediately under the roof. It is called *tint* by both tribes, perhaps after the English "tent." It is formed by laying split bamboo across the beams, about 7 feet from the ground. Ascent to it is made by means of a tree-ladder (M.: *mina-mañka, yaman-mañka;* S.: *kalana*), consisting of a tree trunk wherein notches have been cut. Food is stored in the attic; it is also used as a sleeping apartment.

354 FIREPLACE.—The fire is made on the leveled mud floor, which is often raised a little to avoid dampness. The hearth (M.: *pâûta-wihta;* T.: *kuh-nanañ;* P.: *koh-pani;* U.: *kuh-suruka*) is formed by three logs which are placed so as to form a "Y"; they do not quite touch each other, however, but there is a free space between them, where the fire is made. These three logs (M.: *pâûta yuñk;* S.: *kuh-karan, koh suru*) support the cooking vessels; as the projecting ends burn gradually away, these logs have to be pushed forward

1: Conzemius M-4, 5 (1921) 1932
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CHESTS.—Wooden chests or trunks, known by their English names, are used to store clothing and valuables. They may be of foreign manufacture or made locally from the Spanish cedar (*Cedrela* sp.). 352

ILLUMINATION.—Pine-wood torches are used for illuminating purposes. In certain regions where the pitch pine (*Pinus tenuifolia* Benth.) is absent or scarce the Indians make rude candles by surrounding a cotton thread with beeswax or with the gum of certain trees, as the rubber tree (*Castilla* sp.) or the locust tree (*Hymenaea courbaril* L.). Small baskets, filled with big tropical fireflies, are also used occasionally as lanterns by children. 354

VARIOUS.—The products of the plantation are generally thrown on the floor or put on the tables or in the attic. Little shelves are suspended from the rafters in order to keep cooked food, meat, or fruits free from the numerous creeping and crawling insects which infest the dwellings. 356

Under the roof are seen the various tools, the fishing and hunting implements; they are stuck in the thatch or held by rude racks. From the rafters depend bags of pine-wood soot, bottles with red pigment, and hair oils or small *pispis* gourds (*Lagenaria* [illegible] Ser.) containing shot.

DOMESTIC UTENSILS

FIREMAKING.—Fire was produced formerly by the "twirling" method. A notch was made in a piece of wild cane and a hard-wood stick placed in the cavity. This stick was held perpendicularly and twirled rapidly round and round until fire was produced. Cotton was used as tinder. A very curious method practiced by the Sumu or Paya of Rio Patuca has been described by the Franciscan missionary Fernando de Espino.[31] 372

Steel and flint were introduced in early days for kindling fire, but have now been replaced practically everywhere by matches of foreign manufacture. [77]

FIRE FANS.—In order to accelerate the flame a dozen feathers from large birds, generally the guan (*Penelope cristata*) are tied together in the shape of a fan (M.: *kusu-taya;* S.: *uhlawa*).

TONGS.—Among the Miskito of Pearl Lagoon bamboo tongs or tweezers may occasionally be seen, to pull roasted plantains, cassava 412

[31] Ha criado Dios en lo mas retirado de la montaña un bejuco muy largo, sin, nudos, a manera de ramas de mimbre; cogen esta y cortanla en trozos pequeños de a palmo; pónenlas al humo, y en estando bien secas, cuando han menester fuego, cogen una, y con las dos palmas de las manos la estrujan como al molinillo para hacer chocolate, y cuando ellos ven que está de cierto temple, soplan una punta o extremidad y por la otra parte sale fuego, y se enciende como mecha de escopeta, porque el en si es estoposo por de dentro. De otro modo sacan fuego, que es el comun de los indios, estregando un palo con otro (Serrano y Sanz: 367–368)

1: Conzemius M-4, 5 (1921) 1932
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or other food out of the hot ashes. This tool has also been observed among the Ulwa of Rio Escondido (Wickham, c: 200) and it is very common among the Rama and the Guatuso. The two last-named tribes, however, make these tongs from a small species of palm, the "caña danta" or "ahtak," which they call, like the tool itself, by the names *kiskis* (Rama) and *kaskas* (Guatuso).[22]

MORTARS.—Large wooden mortars (M.: *unu, no*) are found among the Miskito to pound grains and fruits with the aid of a hard wooden pestle (M.: *unu mihta*). The latter is generally single headed and tapers gradually toward the handle end; the double-headed type, which is practically cylinder shaped, is also found occasionally. This mortar has a wide distribution in South America, Africa and Oceania. It was found among the Miskito toward the end of the seventeenth century and is mentioned in those days side by side with the metate (M. W.: 307, 308).

METATES.—The Sumu do not know the wooden mortar, but they employ the metate or mealing stone (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) for grinding maize and cacao and for pounding fruits and berries. The common metate, which may be found in almost every household, is a flat-topped, natural river bowlder, with a rounded waterworn pebble serving as muller or "mano" (M.: *walpa mihta;* S.: *ki mak*).

COOKING VESSELS.—Light tripod iron pots (M.: *dikwa;* S.: *suba, yasama suba*) are now found in every household, and have replaced the earthen vessels (M.: *sumi;* S.: *suba, sau suba*) for cooking purposes. In order to remove the hot pot from the fire the Indians use short wooden sticks with a hook at one extremity, which they put round the ears of the pot; it is known by the following names: M.: *tiñkrus, piñkrus;* T.: *iskrusta;* P.: *pan-alni;* U.: *pan-alka.*

WATER CONTAINERS.—Large calabashes with a small round hole cut in the apex, just large enough to insert a finger, are the common water canteens (M.: *kahmuntara;* T., P.: *sulun;* U.: *taman*). This is the "goat" of the Creoles. Sometimes a corncob is inserted in the opening as a stopper.

Segments of the large species of bamboo are also used to haul water in certain regions. They are made from a section of bamboo stem, so that a nodal septum serves as bottom, while the stem is cut off immediately in front of the next occurring nodal septum.

Fermented beverages are stored in large earthen vessels (M.: *sumi;* S.: *suba, sau suba*); wooden casks of foreign manufacture and homemade troughs are also employed for this purpose.

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DISHES.—Calabashes (M.: *kahmi;* S.: *sutak*) take the place of plates, cups and glasses in the Indian houses; they are made from the fruit of the calabash tree, which is cut in two equal halves, and the soft watery pulp with the seeds removed. The thin, hard, woody shell is not fragile and lasts a long time. 415

By piercing such a calabash with small holes a strainer or collander (M.: *lili;* T., P.: *lilihna;* U.: *dilana*) is obtained; this is the "chachi" of the Creoles.

Large cups without handles, and basins are bought in the local shops; they are known by the name *mak*.

Square, round, or oval-shaped wooden bowls are made by the Indians of mahogany or other woods; they are known by their English names. These bowls are thick and clumsy and shaped like shallow basins; occasionally they are provided with very short, stout legs.

VARIOUS KITCHEN UTENSILS.—Flat withe baskets (M.: *usnuñ, uslun;* S.: *uslun, wah-taina, sidan*), hanging under the roof in the smoke of the fire contain large wooden spoons (M.: *kustara*, from the Spanish "cuchara"; S.: *pan-yamna*), called "pat sticks" by the Creoles, small single-headed wooden pestles or wabul sticks (M.: *tuskaya;* T., P.: *pan-tirina;* U.: *pan-ruknaka*), cacao stirring sticks or "swizzle sticks" (M.: *purbaya;* S.: *pan-korona, pan-poronaka*). These various utensils are made from Spanish cedar, mahogany, sapodilla, or rosewood.

Iron graters are seen occasionally. The Sumu have a native name (*pān-alna*) for this implement, while the Miskito call it by its English name.

The rough leaves of a small tree (*Curatella americana* L.) and of a vine (*Davilla kunthii* St. Hil.) are employed instead of sandpaper for polishing purposes. Both these plants belong to the Dilleniaceae and are called "raspa-guacal," "hoja-chigüe" or "chumico" by the Ladinos; among the Miskito, Sumu, and Creoles they are known by the name *yahal*. 824 356

TOOLS

Before the discovery of America these Indians had few utensils and implements of stone; such articles were chiefly of wood, clay, shell, bone, etc. It would be nearer the truth to say that the Miskito and Sumu were living in the wood age instead of the stone age. Stone objects are, of course, the ones which have been preserved mostly. Fish teeth, snail and tortoise shells, quartz, flint, pebbles, and the like were used as scraping implements. Knives of bamboo are still used to sever the navel string of newborn babies. 412

MACHETE.—The machete (M., T., P.: *ispara*, from the Spanish "espada"; U.: *masel*), a heavy cutlasslike knife of about 2 feet in length, is the vade mecum of these Indians. It is their faithful

1: Conzemius M-4, 5 (1921) 1932
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companion at work and on voyage, and the main tool in house, garden, field, and bush. The Indian uses it to dig postholes for his house, to cut down small trees, shrubs, lianas, grass, or weeds. With the machete he cuts down the underbrush when making a plantation and clears the latter from time to time of weeds and young bush. With the machete he also defends himself against wild animals, snakes, and the like, and, if necessary, against his own kind, which is often more dangerous than the wild beasts of the forest.

Formerly all the machetes used on the Mosquito Coast were imported from England, but in later years they were brought from the United States and from Germany.

AXES.—The Indians are very good at plying the ax (M.: *asa*, from the Spanish "hacha"; S.: *ki*, *kidak*), as many of them have been working at the mahogany camps. The export of this valuable wood has been going on with various long interruptions for over two centuries. Even the women handle the ax fairly well, and cut up small tree stems to be used as firewood. The rectangular-shaped so-called American felling axes or Canada wedge axes are preferred by these Indians; in shape they resemble somewhat the *tuba* fish, and for that reason the Miskito call them *tub'asa*.

STONE AXES.—Single or double bladed stone axes or celts (M.: *alwani mahbra, imyula mahbra;* S.: *alwana suma*, lit.: "thunder egg" or "lightning egg") have been unearthed in various parts of the country. They are grooved or ungrooved, and were firmly fixed in the thick part of a stone-cut wooden handle, or the handle was merely tied firmly to the ax with the aid of a withe passing around the groove. Some of these celts were provided with a short handle cut of the same solid rock. Dampier (I, 85) mentions some good grooved axes among the Indians of Rio Escondido (Kukra-Sumu), which were "flat and sharp at both ends," and were 10 inches long, 4 inches broad, and 3 inches thick in the middle.

Two simple stone axes from the Mosquito Coast have been depicted by Bovallius (II, 299, figs. 81, 82). Three fine monolithic axes from the Bluefields region have been described and illustrated by Saville (b: 34–36, fig. 15). The blade of these axes is of a form foreign to Central America, resembling certain axes from the Lesser Antilles and northern South America. In these three specimens the rounded handle, which has a length of 12 to 12½ inches, is slightly curved. They are respectively in the Museum of the American Indian, Heye Foundation (a), the Peabody Museum of Harvard University (b), and the United States National Museum (c). The first one of them (a) was acquired in 1924 in Nicaragua by Mr. D. E. Harrower. The blade is comparatively longer than in the other axes of this type and the handle is elaborately finished, being decorated with three series of longitudinal grooves. The second ax (b) is carved from a

1: Conzemius M-4, 5 (1921) 1932
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heavy, compact, brownish-green stone with decorations somewhat similar to the preceding one, but the handle has, besides, three transverse oval decorations over the section adjacent to the blade. The third specimen was collected by Mr. J. O. Thomas of Bluefields. It is plain and made of indurated volcanic tufa. The two last-mentioned axes (b and c) have already been described and pictured in a previous publication by Saville (a: 10–11, pl. v, Nos. 5 and 4). Another beautiful ax, perhaps of the same type, with blade and handle carved of one piece of heavy, compact, light-colored rock, was unearthed at Bluefields in 1849 and is now in the Museum of the Moravian Mission at Herrnhut in Saxony.[2]

A beautifully shaped double-bladed stone ax was obtained by Boyle in 1866 on the upper Rio Escondido and pictured by him (b: II, 144, fig. 1); it is now in the British Museum. It is apparently of volcanic stone and is 17¾ inches long and 12¼ inches wide across the blades. The end of the flat handle is perforated. The illustration has been copied by Bancroft (IV, 59, fig. 3) and by Joyce (18, pl. I, fig. 1). Saville (a: 11–12, pl. VI, fig. 1) describes and illustrates this ax together with two other double-bladed specimens from the Atlantic coast of Nicaragua, which are fashioned from an igneous rock, possibly diorite. These two were obtained from a Miskito chief by Mr. J. O. Thomas of Bluefields and are now in the United States National Museum. The largest one of them (Saville, a: 12, pl. VI, fig. 5) is 10¾ inches long and 6¼ inches across the blades; the handle is rounded and has a conical end. The other specimen (pl. VI, fig. 2) is only 8½ inches in length and 7¾ inches wide across the blades. Like that illustrated by Boyle, it is perforated through the end of the flat handle. Other stone axes from the Mosquito Coast are in the collection of Doctor Heuhaus in the Museum für Völkerkunde in Berlin (Lehmann, b: 715).

The modern Indians do not know that these stone axes are artificial and that they are the work of their forefathers. They believe them to be "thunder-bolts," as do also the Creoles and Negroes; the same idea is also entertained by the Ladinos, who call these celts "piedra de raya." It is very probable that these antique axes were also used as defensive weapons in former days, and perhaps also for ceremonial uses.

ADZES.—Adzes are now very common and are used for the making of canoes and other objects of wood; they are used in similar manner as those of our joiners and carpenters. This tool is probably of post-Columbian origin, although the Sumu have a native name (*parin*) for it; the Miskito call it *ats* from the English name. Stone adzes have never been found on the Mosquito Coast, although they are frequently

[2] Cf. Frederick Starr in Internationales Archiv für Ethnographie, Leiden, vol. v, 1892, pp. 58–59.

1: Conzemius M-4, 5 (1921) 1932
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412 met with in certain parts of South America. The ordinary stone ax may also have been utilized as an adze by merely shifting the handle fixation from a vertical to a horizontal plane.

HOE.—In many huts a hoe can be found nowadays; it is used on the fields and in clearing away the grass and weeds growing in front of the dwellings. The hoe is of recent introduction and is known by its English name (*u*).

KNIFE.—Large knives (M.: *skiro*, *kisuro*, from the Spanish "cuchillo"; S.: *kohbil*) now form part of every household.

252 SUGAR MILL.—A primitive sugar mill (M.: *trañko;* T., P.: *tisnak tãihnin;* U.: *tisnak panka*) is employed by these Indians to squeeze the juice out of sugarcane. A stout post is buried partly in the ground, so that it will reach about 3 or 4 feet above the surface. Close to its upper extremity a wooden slab is mortised in and wedged tight. Just above this slab, which looks like a small platform, there is a hole in the post, where a stout bar (M.: *mihta;* S.: *tiñ*) fits loosely. One of the women lays a piece of cane on this "platform," her husband inserts the pole in the hole and presses downward, crushing the cane, whereupon the juice flows into a receptacle placed on the ground. The woman slips the cane forward until every part of it is crushed, and finally twists it like a rope to wring out all the juice.

252 171 This mill is common in the regions bordering on the Caribbean Sea. Several mills of this type, found in South America and on the Isthmus of Panama, have been figured by Nordenskiöld.[34] It is well known that sugarcane was introduced into the New World by the Spaniards; still this type of mill is never met with among the whites. On the other hand, the negroes of eastern Central America and the Bush negroes of Guiana use it commonly, more so than the Indians themselves. According to the prominent African specialists Seligman and Lindblom, sugar mills of this type are not met with in the Dark Continent. Neither are they known from Melanesia. Nordenskiöld[35] believes, therefore, that this implement has been invented by American Indians in post-Columbian days, when they had become acquainted with sugarcane. In view of the fact that this sugar mill is more common among the negroes than among the Indians, I am inclined to believe that it is a post-Columbian invention made in America (probably in the West Indies) by negro slaves, who were largely employed on the sugar estates. Even to this day it is not met with among the Sumu of the interior, who crush the canes in primitive wooden roller mills turned by handspikes (cf. Wickham, b: 216; c: 206).

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[34] Comparative Ethnographical Studies, vol. VIII, Göteborg, 1930, pp. 80–84, figs. 39–43.

[35] Ubi supra, p. 83.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

Weapons.—*Mosquito, Sumo,* and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque,* an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella.* Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib,* and both types are used by the *Cuna* and *Choco.*

POLITICAL ORGANIZATION

Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

TOOLS

Before the conquest the Miskito had very few tools and as has been pointed out by Conzemius[1] these Indians were living in a wood age rather than a stone age. Today the common tools in use are noted in the order of their importance. The machete *(ispara)*, a heavy knife varying from one to two feet in length is the most commonly used tool. It can be used for almost any purpose from clearing bush to ligging postholes. It can also be used as a weapon of defense as well as for cutting and slicing food. Second to the machete is the ax *(asa)* which is used for chopping trees and preparing timber. These axes are made of metal and stone *(alwani mahbra)*. Adzes *(ats)* are today in common use for the making of boats and other objects of wood. With the exception of the stone ax both the machete and the adze are of post Colombian origin.[1] Hoes have been introduced in the last century and these are used primarily for clearing weeds. A variety of knives *(skiro, kisuro)* are seen in all households and used not only to cut with for eating purposes as well.

DIVISION OF WORK

The husband prepares the patch of forest for the plantation. He cuts down the trees and clears the ground by fire. However, the major part of planting, weeding, and taking in the crop is left to the wife. The manufacture of hunting and fishing implements is the man's job. Fishing, however, is carried out by both men and women. The building of canoes is the man's work although women sometimes assist him in this arduous work. Men will cut trees for firewood but the women have to fetch the lengths of timber cut by the men.

It is customary for women to carry heavy loads but the men occasionally do. Heavy loads are placed on the back by the use of a carrying strap (*bombador*). Many of the women carry loads on their heads.

All the domestic industries such as weaving, spinning, cooking, etc., are female occupations. Tailoring, however, is shared by both the men and the women. The barbecuing of the chase is the only cooking men indulge in.

FUNCTIONAL ENTERPRISE

Interchange of commodities is commonly effected by barter but today there is an ever increasing use of currency (córdoba). Trading is carried out with traders and the Indians in many instances exchange

1: Conzemius M-4, 5 (1921) 1932
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The rough leaves of a small tree (*Curatella americana* L.) and of a vine (*Davilla kunthii* St. Hil.) are employed instead of sandpaper for polishing purposes. Both these plants belong to the Dilleniaceae and are called "raspa-guacal," "hoja-chigüe" or "chumico" by the Ladinos; among the Miskito, Sumu, and Creoles they are known by the name *yahal*. 824 356

TOOLS

Before the discovery of America these Indians had few utensils and implements of stone; such articles were chiefly of wood, clay, shell, bone, etc. It would be nearer the truth to say that the Miskito and Sumu were living in the wood age instead of the stone age. Stone objects are, of course, the ones which have been preserved mostly. Fish teeth, snail and tortoise shells, quartz, flint, pebbles, and the like were used as scraping implements. Knives of bamboo are still used to sever the navel string of newborn babies. 412

MACHETE.—The machete (M., T., P.: *ispara*, from the Spanish "espada"; U.: *masat*), a heavy cutlasslike knife of about 2 feet in length, is the vade mecum of these Indians. It is their faithful

1: Conzemius M-4, 5 (1921) 1932
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shapes and sizes for hauling water, storing food and intoxicants, and for cooking purposes.[34]

POTTERY OBJECTS.—The various kinds of pottery vessels used for cooking and for storing liquids are known by the general name *sumi* among the Miskito, and *suba* or *sau suba* among the Sumu. Some of the large jars used in fermenting intoxicants reach 4 feet in height. Griddles are unknown to the Miskito; they are called *liwa* (T., P.) and *lawa* (U.). Jugs or water jars are known as *putisa* (M.) and *sutpanak* (S.); a small bowl, which is seen chiefly at the festivals, is called *uñkra* (M.), *sumai* (T., P.) or *uñkara* (U.). Most of these vessels, especially the larger ones, are slightly pointed at the base, so that they have to be placed in a cavity of the mud floor, or they are propped with stones to keep them upright. The fruit of the calabash tree served as an early model for the pottery vessels, and several types recall the shape of that fruit. Tobacco pipes (M.: *twako mina;* S.: *aka pan, aka pana*) are also made to the present day, while pottery whistles have been found in the old burial grounds.

MOLDING.—The making of the pottery is exclusively the work of the women. Potter's clay (M.: *slaubla;* S.: *sau*), noted for its good quality, may be hauled by the Indians from a great distance. The material is broken out of the ground with the aid of a strong, pointed stick. After being cleaned of all foreign particles it is mashed with the hands and mixed with water.[35] The clay is molded by hand, for the potter's wheel, like any other kind of wheel, was unknown in America in pre-Columbian days. Smaller vessels are shaped directly out of a lump of clay placed on a heavy wooden board upon which a large bijagua leaf has been placed; this leaf is continually turned round in the process of shaping.

In case a larger vessel is manufactured, the bottom portion is likewise shaped directly out of a lump of clay, and the walls are built up, not of one continuous coil, but of several, each succeeding one adding to the height of the pot. Old broken pottery vessels clearly show the coils by which they were built up.

When the desired height has been reached, the upper edge is neatly trimmed with the aid of the fragment of a calabash shell, wherein an indentation has been made, corresponding to the contour the vessel is to receive. When the latter is partly dried, it is polished with the aid of a smooth pebble.

FIRING.—After having been allowed to dry slowly in the shade for several days the ware is placed in a fire made on the ground in

[34] The present-day Miskito rely entirely on the more convenient and durable iron cooking pots for cooking purposes, but they still obtain, by way of trade from their Sumu neighbors, large clay vessels for the storing of mishla.

[35] Wickham (c: 207) mentions the Ulwa of Rio Escondido tempering the clay by mixture with a proportion of ashes from the bark of a certain forest tree, collected and burned for the purpose.

a b

a, Net carrying bag made from the fiber of the pita or silk grass plant. Sumu of Rio Patuca; b, saddlebag made by the hispanised Sumu of upper Rio Grande

[p. 50A]

1: Conzemius M-4, 5 (1921) 1932
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1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuheañ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaska*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellschner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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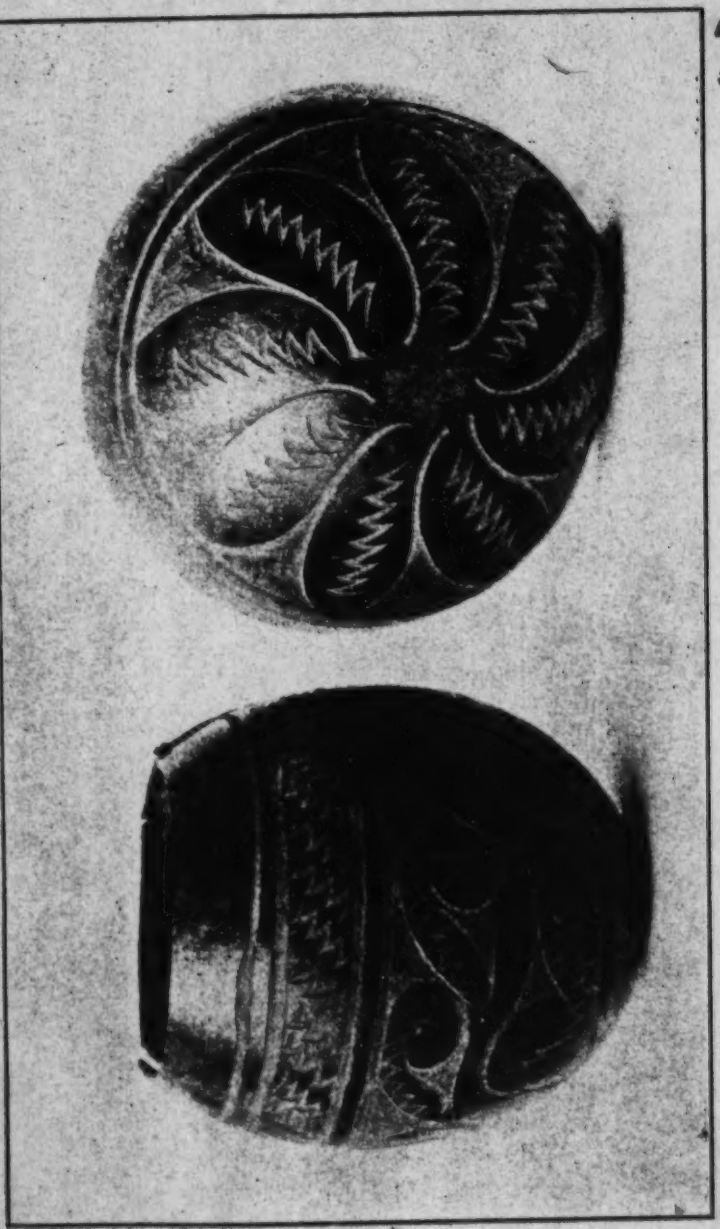
BULLETIN 105 PLATE 9



DECORATED CALABASH VESSELS
Bumn of upper Rio Grande.

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[p. 54 A]

2: Kirchhoff E-4 (no date) 1948
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342 time rectangular houses with a hip roof used by single families are built. The steep roof, thatched with palm leaves, was supported on posts. All houses have walls about 4 feet (1.3 m.) high. Lofts for storing food and for sleeping are made by laying split bamboo sticks across the beams.

352 Household furniture consists of mattresses of bark or deerskin, platform beds (*Paya* and *Northern Sumo*), sitting hammocks, wooden chests, three- or four-legged stools, and a notched-post ladder. Fires are built [354] of three logs on slightly raised mud platforms inside the houses. Stored 415 near these are cooking pots, bamboo tongs used to remove food from the fire, gourd containers and colanders, wooden spoons, ladles, and sections of bamboo used to haul water and to store beverages.

DRESS AND ORNAMENTS

291 Bark cloth was formerly the most common fabric, but it is now being replaced by cotton cloth, usually obtained by trade. Native cotton cloth was used largely for ceremonial and festive occasions. The *Mosquito* made blankets and clothing of palm fiber.

The male costume consists of a breechclout and poncho. The latter is tied under the arms and secured around the waist with a belt. Everyone went barefoot, but occasionally *Paya* men wore tapir-hide sandals and *Mosquito* men moccasinlike footgear. Women wore a knee-length, wrap-around, bark-cloth skirt, but the upper part of their bodies was nude. Children went nude until they were 8 or 10 years old, when they adopted a breechclout (*Sumo, Mosquito, Paya*). *Sumo* chiefs used a long tunic and a sash, apparently made of cotton. It was dyed and embroidered with crane feathers. These costumes, or modifications of them, are still [177] worn by the more conservative tribes, but commercial cloth is becoming more common and European styles are being adopted.

302 Men cut their hair short, but occasionally elder men left a lock at the back of the crown (*Mosquito*). In about 1850 the *Sumo* tied their hair into a queue, which was oiled or greased; at present they cut it short with bangs over the forehead. A crude comb was made of sticks tied together. Women cut the front hair in bangs allowing the rest to hang freely. The men attached feathers to their hair but women decorated [301] theirs with flowers and colored bands. At time of mourning the hair is cut off short. Both sexes devote considerable attention to their hair.

301 Nose pins and lip and ear ornaments of gold or turtle shell were worn. The *Mosquito* hung shell or brass plates from the lower lip. Conical or bell-shaped lip or chin ornaments were worn by the *Kukra*. Wooden plugs worn in the ear lobes were common. On festive occasions the *Mosquito* and *Sumo* wore either a cotton headband decorated with feathers or a cap made of bamboo decorated with feathers and with long, painted, bark-cloth streamers. The *Mosquito* hung metal or shell plaques and ornaments made of bone and feathers about their necks. *Sumo* women

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [531]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [967]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

415 Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

412 Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and [352] knives made of split bamboo. Three-legged wooden stools were formerly [532] richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with [531] simple geometrical designs (pl. 36, *bottom*).

411 **Weapons.**—*Mosquito, Sumo,* and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque,* an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella.* Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib,* and both types are used by the *Cuna* and *Chocó.*

POLITICAL ORGANIZATION

622 Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

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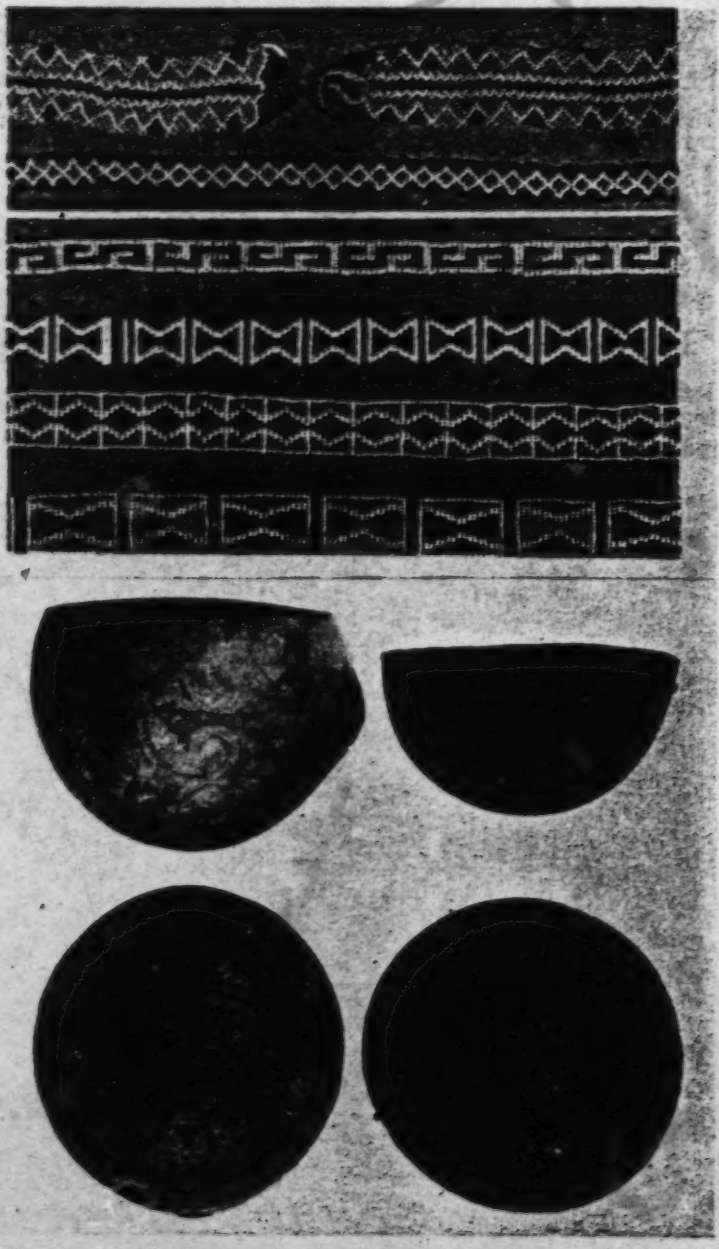

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PLATE 38.—Sumo manufactures. *Top:* Beadwork. *Bottom:* Decorated gourd bowls. (Courtesy American Museum of Natural History.)

[p. 228 - B]

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

cotton fluff is placed in the notch and the twirling continued. Several 373
fragments of the cotton begin to glow and these are fanned into flame. Today, many Indians use matches but the primitive method of making fire is still used to a great extent. Many of these fires may have been started a generation or more ago. They are tended or kept burning in iron or stone cooking ovens within the houses.

Many of the Miskito use bamboo tongs or tweezers to pull roasted 415
plantains, cassava, and other foods out of the hot ashes. The Miskitos use large wooden mortars *(uno, no)* and hard wooden pestles *(una, mikta)* to pound grains and fruits. The pestle is single headed and tapers toward the handle end. The Sumu Indians on the other hand use a metate and mealing stone for grinding maize and cacao. Light iron tripod post *(dikwa)* are found in every household, and have replaced earthen vessels for cooking purposes. Large calabashes with a small hole in the apex, just large enough to insert a finger, are the common water canteens *(kahmuntara)*. Segments of a large species of bamboo are also used to haul water in certain areas. They are made from a section of the bamboo stem cut so that a nodal septum serves as a bottom. The stem may be cut off immediately below the next septum or it may be cut outside of each septum to convert it into a small barrel. A hole is then drilled for filling and a plug inserted.

Fermented beverages are stored in large earthen vessels *(sumi)*. Plates, cups and glasses are made from the calabash *(kalmi)* fruit, which is cut and the soft watery pulp and seeds removed. Square, round, or oval shaped bowls are sometimes made of mahogany and other woods, but calabash bowls seem to be preferred. A variety of wooden spoons, pat sticks, and stirring sticks are also used. A primitive sugar mill *(tranko)* is employed to squeeze the juice from sugar cane.

It has been observed that the Miskito Indian has an enormous ap- 264
petite. At some meals he may take as many as a dozen helpings. On the other hand he may go days with hardly any food at all, specially during inclement weather, or during a hunt or a long travel. Generally, the women do the cooking, the men only on trips away from home. No regularity is observed in eating, most of the Indians eating whenever they are hungry or after hunting. They usually have one meal in the early morning and one at night before retiring. There is no midday meal. When a meal is ready the grownup men are served first with the best and largest shares. A calabash of soup or stew is usually served first. Salt if available is eaten separately. The women and children eat together. Indians rarely speak during a meal, and a visitor is never questioned while he too should remain in silence, since to do otherwise would be a breach of etiquette.

1: Conzemius M-4, 5 (1921) 1932
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the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *aual-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress. 302

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *alami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[19] 386 824 302

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness." [416]

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tiñ-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido. 304

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quartz, greenstone, fish, and turtle bones, small vertebrae, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple- 301

[19] According to Bell (b: 158) the male Sumu from the upper Rio Prinsapolca painted their faces black and red in stripes and diamonds.

1: Conzemius M-4, 5 (1921) 1932
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225 manner as to fall vertically onto and thus pierce the tough shell of the turtle. If thrown obliquely it would glance off the smooth carapace. Upon being struck the turtle disappears in the water, dragging the long line with the boat along, but after a while it becomes exhausted by its struggle. The boat is swamped and placed under the turtle to haul it in, for the latter may weigh up to several hundred pounds. By shoving the canoe from one side to the other the Indians throw out enough water to allow it to float, while the remainder is bailed out with a calabash. After the extraction of the harpoon head, the wound is stopped with cloth; otherwise the turtle may die. These animals are also harpooned at night, their presence being indicated by the line of phosphorescent light they produce in the water. A smaller implement is employed for young sea turtles and for the different smaller varieties met with in the rivers.

TURTLE NETS.—The Miskito of Tasbapauni (Pearl Lagoon) also employ large turtle nets, from 50 to 100 fathoms in length and from 6 to 8 feet in width, made of imported twine. These nets have been introduced into the country by the fishermen from the Cayman Islands and the Bay Islands. These turtle nets have very large meshes; they are anchored at the bottom and floated with buoys placed along the margin. Wooden turtle decoys are also attached to them in order to attract the prize, which becomes entangled therein and is then easily caught. Sometimes turtles die in the nets, being unable to rise to the surface to breathe.

OTHER METHODS OF CATCHING TURTLES.—Sea turtles are also caught at night by the Indians, when they come to the shore to dig a hole in the sand to deposit their eggs therein. They then carefully cover up the hole again, and occasionally even deposit some leaves or driftwood on the spot, so as to prevent detection. The Indians are very clever in discovering the eggs, being guided by indications on the surface sand. They poke suspected places with pointed sticks and by the moist particles adhering to the latter they immediately perceive when an egg has been pierced. Upon withdrawing the stick they examine and smell it, and having come to a satisfactory conclusion they turn up the sand. The Indian will also run after the turtle, overhaul it, and turn it on its back so as to render it helpless.

The green sea turtle (M.: *uli, lih;* S.: *wili*) is considered a great delicacy while the loggerhead and the hawk's-bill are also eaten. The latter species furnishes the valuable shell. Turtles are penned in stockades or "crawls,"[45] made by driving heavy mangrove posts in the shallow sea water, until needed for food. [417]

Several species of tortoises, of which the largest is the bocatora (M.: *kuswa*[46]; S.: *kowa, kuwa*) are also greatly esteemed as food.

[45] From the Spanish corral, "cattle pen."

[46] M. W. (312) gives this name in the form *cuskuow*.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yañ*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.: 308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Pispis mining district, around Cuera Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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444 gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, [511] even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

438 INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by [436] barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[20] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

556 These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

317 FORMER ARTICLES OF BARTER.—The Miskito used to evaporate salt from the water of the sea and lagoons and collect pretty sea 438 shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

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3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

cattle and other goods for objects of cheap manufacture. Yet these objects may be of real intrinsic value to the Indians and under such circumstances it is difficult to judge with fairness. However, in the larger settlements Indians have learned the true cost of materials and considerable agitation occurs in trading. Payment for services performed in isolated communities can be accomplished by the use of such commodities as salt and tobacco. In fact, many will prefer these to actual money: in the more remote areas money per se is meaningless and payment is performed with gifts.

These days there is an ever increasing want of objects from the outside world. The items most desired are salt, machetes, axes, knives, adzes, hoes, iron cooking pots, stoves, fish hooks, files, shotguns, ammunition, cotton goods, ribbons, blue dungarees, looking glasses, combs and tobacco. Cereal grains and flour are also desired.

The enterprise of the Indian today is centered mainly around the creation of useful objects. Such objects, therefore, are often used for exchange purposes. Stone work is limited to the manufacture of crude metates or maize grinders (walpa-akbaya) which are used for grinding maize. In the northern part of the Miskito coast a coarse brownish cloth is pounded from the inner bark of a tree closely resembling the rubber trees *(Castilla* sp.). The cloth as well as the tree is referred to as *tunu* or *tikam*. The bark cloth is made into sheets or blankets for bed use or into loin cloths *(palpura)*. This cloth is of high value. Pottery once a valuable commodity to these Indians is not alonger made.

Today the main enterprise for the Miskito Indians for barter, exchange or payment are as follows: rubber collecting, banana agriculture, boat making, mine working, cattle and pig raising, general work on rivers, fur from wild animals, and general labor. However, it is to be noted that the Indian could and does in most instances subsist on his immediate environment.

VEGETABLE FOODS

Agriculture is not highly developed on the Mosquito coast, because the many plant-destroying insects limit the process of cultivable products, and the bush springs up early after the ground has been cleared. Thus after two or three crops have been obtained from a plantation *(kanana)*, a variety of weedy looking shrubs and grass, which make cultivation difficult, gets a hold on the land. The Indian then does not consider it worthwhile to undertake the labor needed to keep the ground clear but prefers to set up a new plantation *(insla)* by cutting down a patch of useble forest.

1: Conzemius M-4, 5 (1921) 1932
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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[17] T., P.: *wah;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *tráusis*, from the English; T., P.: *kal-anin;* U.: *kalson*, from the Spanish "calzón") with the tails generally not tucked in. They make these articles themselves from imported cloth or they obtain the finished garment by way of trade. Formerly the Sumu used a sort of shirt or poncho, consisting merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open at the approach of rain he pulls his shirt off and covers it up with large *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

[177] [439] [287]

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Nowadays it is made of imported bright-colored cloth, but formerly the common tunu bark cloth was used for this purpose. The upper part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *taiai* by the Sumu.

[439] [287]

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[18] S.: *kiñkura*) which hung down to the knees; it was beautifully embroidered with the down of the muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalasawa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

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[17] This name is mentioned in 1699 under the form *purproy* (M. W.: 307, 308).

[18] Compare the word "huipil" in Mexican-Spanish.

1: Conzemius M-4, 5 (1921) 1932
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PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits of a small tree (*Sapindus saponaria* L.; M. &. S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiwat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakus;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the pigment is tempered with native vegetable oils. It is applied by

1: Conzemius M-4, 5 (1921) 1932
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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puhlak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *krikri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets
513 and as bed sheets (M.: *nina-pala, munta-pala;* T., P.: *dañ-rina;* U.: *dañ-paknak*); in Honduras the Miskito also use mats (*tnasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilar*, corrupted from the English; S.: *tunana*) are stuffed with cotton
[824] or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses. The mosquito nets, called *pabulo* by both tribes, are made of opaque
● [439] cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wah*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

CRADLES.—In former days cradles (M.: *kuhsañ;* T., P.: *pala;* U.:
854 *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

STOOLS.—Low wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*)
352 with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

1: Conzemius M-4, 5 (1921) 1932
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4/2 companion at work and on voyage, and the main tool in house, garden, field, and bush. The Indian uses it to dig postholes for his house, to cut down small trees, shrubs, lianas, grass, or weeds. With the machete he cuts down the underbrush when making a plantation and clears the latter from time to time of weeds and young bush. With the machete he also defends himself against wild animals, snakes, and the like, and, if necessary, against his own kind, which is often more dangerous than the wild beasts of the forest.

●[839] Formerly all the machetes used on the Mosquito Coast were imported from England, but in later years they were brought from the United States and from Germany.

4/2 3/3 AXES.—The Indians are very good at plying the ax (M.: *asa*, from the Spanish "hacha"; S.: *ki*, *kidak*), as many of them have been working at the mahogany camps. The export of this valuable wood has been going on with various long interruptions for over two centuries. Even the women handle the ax fairly well, and cut up small tree stems to be used as firewood. The rectangular-shaped so-called American felling axes or Canada wedge axes are preferred by these Indians; in shape they resemble somewhat the *tuba* fish, and for that reason the Miskito call them *tub'asa*.

4/2 1/2 STONE AXES.—Single or double bladed stone axes or celts (M.: *alwani mahbra*, *imyula mahbra;* S.: *alwana suma*, lit.: "thunder egg" or "lightning egg") have been unearthed in various parts of the country. They are grooved or ungrooved, and were firmly fixed in the thick part of a stone-cut wooden handle, or the handle was merely tied firmly to the ax with the aid of a withe passing around the groove. Some of these celts were provided with a short handle cut of the same solid rock. Dampier (I, 85) mentions some good grooved axes among the Indians of Rio Escondido (Kukra-Sumu), which were "flat and sharp at both ends," and were 10 inches long, 4 inches broad, and 3 inches thick in the middle.

Two simple stone axes from the Mosquito Coast have been depicted by Bovallius (II, 299, figs. 81, 82). Three fine monolithic axes from the Bluefields region have been described and illustrated by Saville (b: 34–36, fig. 15). The blade of these axes is of a form foreign to Central America, resembling certain axes from the Lesser Antilles and northern South America. In these three specimens the rounded handle, which has a length of 12 to 12½ inches, is slightly curved. They are respectively in the Museum of the American Indian, Heye Foundation (a), the Peabody Museum of Harvard University (b), and the United States National Museum (c). The first one of them (a) was acquired in 1924 in Nicaragua by Mr. D. E. Harrower. The blade is comparatively longer than in the other axes of this type and the handle is elaborately finished, being decorated with three series of longitudinal grooves. The second ax (b) is carved from a

1: Conzemius M-4, 5 (1921) 1932
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the English freebooters of Jamaica during the latter part of the seventeenth century. The most important of the foreign-made articles, which are now considered indispensable to the bulk of the Indians, are the following: Salt, machetes, axes, knives, adzes, hoes, light 3-legged iron cooking pots, fishhooks, triangular files, shotguns with ammunition (powder, shot, percussion caps), cotton goods of various patterns (calico, gingham, salampores, drilling, blue dungaree), bright-colored handkerchiefs, ribbons, thread, needles, beads, combs, small looking-glasses, jew's-harps, clay pipes, tobacco, etc. In order to obtain these commodities the Indians will work for a short time as day laborers, or sell some forest or agricultural products. Very little value is placed upon labor performed at home, and certain homemade articles, which have taken a considerable time to prepare, are often bartered for a mere trifle.

METAL WORKING

Gold ornaments appear to have been known in pre-Columbian days and were used for ceremonial purposes and for personal decoration. Breastplates of wrought gold were already observed by Columbus in 1502 at Cariay, but this locality must be placed in the territory of Costa Rica and not on the Mosquito Coast, as has been done by various historians. About 1699 silver breastplates, either bought from the Europeans or hammered by themselves out of silver coins, formed part of the gala dress of the Miskito (M. W.:308); they may have been emblems or insignia of authority.

Ornaments of gold were probably introduced among the Miskito and Sumu by way of trade from the Pacific side of Nicaragua or from the Talamanca region of Costa Rica, where they were common. They were probably the work of the Chiriqui goldsmiths, who had attained a high degree of skill in the making of low-grade gold objects. But they must have existed very sparingly on the Mosquito Coast, for in recent days none has been discovered in the country. Figurines and amulets of the precious metal are said to have been discovered in the Pispis mining district, around Cucra Hill, on the Rio Wawa, and at El Dorado (Honduras), but these reports need confirmation.

The rude tribes of the Mosquito Coast did not know the art of working gold, copper, bronze, or any other metal; this art was known, however, to the Indians of Bolivia, Peru, Mexico, and other regions of America in pre-Columbian days. Placer mining is carried on in many parts of the country by whites, negroes, and Ladinos, but not by the Indians. There is no reliable record of the Miskito and Sumu knowing how to wash gold from the sands of the numerous auriferous streams before the arrival of the Europeans. Even to-day

1: Conzemius M-4, 5 (1921) 1932
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316 this is done by them in isolated cases only; they use a round, low bowl or *batea*, in which they place some of the auriferous sand together with some water. Then, whirling the *batea* rapidly, a feathery stream of mingled sand and water flows constantly over the edge. When the sand is nearly all exhausted, the bowl is filled again, and this process is repeated a number of times. Finally a little deposit of grains of gold will be found at the bottom.

These Indians have no name in their own language for either gold or silver, but they call these precious metals "yellow money" and "white money" respectively. Their word for money (M. and T.: *lala;* P. and U.: *lihwan*) might have designated gold originally, or perhaps metal in general. Still, there is a native name for iron or steel (M. and T.: *silak;* P. and U.: *yasama*).

301 Cheap bracelets, earrings, and finger rings of foreign origin are
● 439 now very common among both tribes. The iron and steel objects,
411 which are now in universal use on the coast, have not been cast or forged locally, but have been obtained in trade. Harpoons are made from our common triangular files with the aid of another file. This process is very slow and tedious. The iron points or "heads" for arrows and spears are generally made from old cask hoops or from other scrap iron.

STONEWORK

324 METATES.—Stonework is practically limited to the manufacture of crude metates or maize grinders (M.: *walpa-akbaya;* T., P.: *ki-watak;* U.: *ki-tiknaka*) which are used for grinding maize, cacao, or other grains or fruits. They are merely plane slabs of a tufflike rock with a slightly concave grinding surface, on which the grains are crushed with the aid of a handle or metlapil (M.: *walpa-mihta;* S.: *ki-mak*). These crude metates are made with the aid of a hard blackish stone chisel (M.: *kwa-siksa;*[37] T., P.: *pransa, paransa;* U.: *ki-tisna*).

324 ANTIGUALES.—Elaborate metates, cylindrical bowls and mortars
172 of a hard granitelike material are occasionally found on the Mosquito Coast. Isolated specimens of these articles are met with, but as a rule they are found in deposits from miniature size, perhaps children's toys, to giant sizes for ceremonial purposes. These objects exist in all stages of manufacture, but the finished product is now very scarce, having either been taken away or broken.

Such old sites or "antiguales," as they are known locally, are especially numerous in Honduras between the rivers Plátano and Paulaya; they are found generally on some elevated spot within a

[37] At Ciudad Antigua, in the Nicaraguan department of Nueva Segovia, I heard this tool called "cuabul" (=*kwa-bul*) by the Spanish-speaking inhabitants. In the Miskito language *siksa* means "black," while *bul* is "mottled" or "speckled."

1: Conzemius M-4, 5 (1921) 1932
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WRITING.—The carvings on one of the bowlders at the Kiwras Rapids on Rio Coco are said to resemble somewhat the characters of the Latin alphabet. Wickham (b: 245) heard of some "writing" on rocks of Rio Mico, which he considered—quite erroneously of course—inscriptions in Latin made by the early Jesuit missionaries. Neither Miskito nor Sumu appear to have possessed the art of writing as did their western neighbors, the Nicarao and Chorotega. According to Oviedo the two latter tribes had books of parchment made from deer skins. Picture writing was also practiced, and is still, by the Cuna Indians of Panama, as has recently been ascertained by Nordenskiöld.[39]

RUBBER COLLECTING

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In former days the Indians used to collect rubber from a wild-growing tree (*Castilla* sp.), which is found nearly all over the country. This industry started about 1860, first on Rio San Juan, and gradually spread to the remainder of the Mosquito Coast. The Indians sold their rubber to the local merchants, who generally made large advances to them. About 1912 and 1913, when the export of rubber ceased, owing to the low price caused by the large production of plantation rubber in the British and Dutch East Indies, many Indians found themselves heavily in debt to the merchants.

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The rubber collectors or "huleros" first made a rude ladder out of the lianas that hang from the trees; this was done by tying short pieces of wood across them with the aid of smaller lianas. Later iron spurs were introduced and attached to the feet to climb the trees. With the machete they then scored the bark with cuts having the shape of the letter V, the point being downward. Such cuts were made all the way up the trunk, at a distance of about 3 feet from each other; they extended nearly round the tree, but the latter was on no account to be completely girdled. At the bottom of these series of cuts a spout was inserted to conduct the latex juice into buckets or other containers. In about half an hour all the whitish milk had run out of the tree.

Afterwards the latex was strained and caused to coagulate by the addition of an alkaline decoction made from the juice of the chajmol vine (*Ipomoea bona-nox* L.; M.: *tatako;* T. and P.: *tutuk;* U.: *ulupuy*) or from that of a liana (*Calonyction speciosum*); this was combined with the latex in the proportion of 1 pint to 2 gallons. To prevent putrefaction coagulation must be effected within about 24 hours after the collection of the milk. The resulting mass was then made into round flat cakes, which were exported under the name "sheet rubber"

[39] Picture Writings and Other Documents. Comparative Ethnographical Studies, vol. 7, part 1 (1928) and part 2 (1930).

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsan;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *rikaya* salamander. The Indians utilize small glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasanka*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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them. White thread and small needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from Spanish "aguja") of foreign manufacture are employed to string the beads.

NAVIGATION AND CANOE MAKING

Travel is effected chiefly by canoe, for there are hardly any roads in the country outside of the hunting trails; the numerous navigable rivers intersecting the country form, together with the lagoons and the sea, the means of communication.

The Miskito inhabiting the immediate seashore from Cabo Gracias a Dios on southward are excellent seamen; they were already noted for their courage on the sea by the buccaneers (Raveneau de Lussan: 440). The Miskito living to the north of that settlement, however, navigate the lagoons and rivers, and rarely venture on the sea. The Indians living inland, on the other hand, are afraid of the sea and of the large lagoons, but they are perfectly at home in the bush, and they are very expert in navigating the river boats through the dangerous falls and rapids.

BRIDGES.—The liana bridges, which are met with in other parts of Central America, are unknown on the Mosquito Coast. The Miskito and Sumu occasionally make a crude bridge over a narrow creek by felling a tree across it. Canoes are used everywhere for the crossing of the streams.

TYPES OF CANOES.—Two sorts of dugout canoes are used on the Mosquito Coast. The "dori," or keeled canoe, is used to navigate the sea and lagoons, while the "pitpan," or flat-bottomed canoe, is employed on the rivers. The sea canoes are fast sailors, but somewhat "cranky." All these boats are hollowed out by means of the adze; the largest specimens, cut out of the solid tree, without any addition, may reach up to 5 feet beam and 40 feet in length.

PITPAN.—The "pitpan" is a long narrow boat with flat bottom, drawing but little water; it is therefore particularly fitted to navigate the shallow creeks of the interior which abound in rapids and falls. It glides noiselessly over the water and is easily steered, but it is very cranky and the slightest motion renders it liable to upset. It is therefore of no use on the sea. The pitpan has a square projecting bow and stern, like a small platform, large enough for a person to stand on. A hole is made in the bow through which a pole is thrust perpendicularly in the ground, to moor at river banks or at shoals. The pitpan is very thick bottomed, and for that reason may sustain very rough handling in hauling it over the rocks at rapids and falls.

The name "pitpan," which is in general use among the English-speaking population of eastern Central America, is taken from the Miskito word *pitban*, which means plaited. It is claimed by some

1: Conzemius M-4, 5 (1921) 1932
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milked, their owners being unwilling to "rob" the calf, but the meat is esteemed.

HORSES.—Horses (M.: *aras*, from the English "horse") are not common, while mules and donkeys are conspicuous by their absence. The horse is sometimes used as a riding animal by the savanna Indians, but loads are transported either by canoe or on man's back. The Indians ride bareback and use a sort of bridle consisting of a rope made from bark fiber, which is tied loosely round the lower jaw, leaving two ends for reins. When swimming the horse in deep water, the rider gets off its back, at the upside in case of a running stream, and swims beside the animal, holding on by its mane. As soon as the horse touches bottom he gets on again. The manner employed in breaking a young horse is very simple. One man leads it with a rope into the water, to a depth of 3 or 4 feet. Then another man quickly jumps upon its back, whereupon the frightened animal begins to buck and skit. After a while it is completely exhausted and docile.

PIGS.—Pigs (M. and T.: *kuirku*, from the Spanish "puerco"; P. and U.: *kusi*, from the local Spanish "cuche") were already found occasionally among the Miskito at the end of the seventeenth century (M. W.: 310). Pork is rarely eaten by the Indians, and fattened hogs are sold to the foreigners and Ladinos. Little care is given to these animals; they are left to roam around and find a large part of their food themselves. At night they are kept in a pen adjoining the dwelling, or they are brought inside and tied to a post on account of the various felines preying upon them.

FOWL.—The domestic fowl (M.: *kalila*, from the Spanish "gallina") is found in every house. It is esteemed chiefly on account of the crowing power of the cock, which serves as a clock at night. The Miskito had already some fowls at the end of the seventeenth century (M. W.: 310). Among the Sumu this bird is called *sakara* and *katarama;* these appear to be onomatopœic names, and similar terms are met with in other parts of Central and South America.

DOGS.—In every Indian dwelling there roam about some sneaky, repulsive curs, ready to steal if they are left unwatched for an instant. They are kept as pets, as watch dogs, but above all, for the chase. Good hunting dogs, especially such as are trained to hunt the jaguar or the puma, are very highly valued. The Indians feed them but little, fearing that they will lose all interest in hunting. The dogs are therefore very lean and the bones of the long, thin body generally appear distinctly beneath the skin. They roam about the house during the night and make their lair at the foot of that of their masters; they are responsible for the bloodthirsty fleas which abound in the Indian dwellings.

1: Conzemius M-4, 5 (1921) 1932
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According to Belt (204) the Sumu living on the upper Rio Grande used to come periodically to the Spanish settlements in order to obtain dogs. They would barter a gun or a large iron pot for a single dog, if it was of the right color. Some Ladinos around Olama had even in those days commenced to rear dogs to supply the demand. These Indians had a special liking for black ones, and did not value those of any other color so much. Lehmann (c: I, 405) states that the Miskito formerly buried a red dog (*pâuan*) with a dead person, in order to serve the latter on his voyage to the underworld. However, the writer has never observed that either Sumu or Miskito have a preference for a certain color.

There is no record of the former existence on the Mosquito Coast of the "xulo" (xolotl) or barkless dog, which was tamed in the Pacific region of Nicaragua at the time of the conquest. The native names of the common dog (M.: *yul;* S.: *sul, sulu, solo*) bear a close affinity to that Nahuatl word. Allen has identified the barkless dog in question with the raccoon, which is, however, called *suksuk* by both Miskito and Sumu.

AGRICULTURE

Agriculture is not as highly developed on the Mosquito Coast as in the remainder of Honduras and Nicaragua; it furnishes, nevertheless, the principal means of subsistence.

PREPARING THE PLANTATION.—In order to make their plantation (M.: *insla;* S.: *yamak*) the Indians cut down a patch of the forest, generally on the bank of a navigable stream. The rough work, that is the felling of the trees and the clearing of the ground, is essentially man's work. The large hardwood trees are usually left standing, but all the other giants of the forest are cut down. This work takes place at the beginning of the dry season, about February or March. Toward the beginning of May fire is set to the tangled mass. When the ground has thus been prepared by the men, the women take charge of the future plantation, the planting and cutting down of the grass and weeds being their occupation. Sometimes the man and wife do the planting together. The harvesting is the work of the females.

The ax, machete, and "barreta" or pointed digging stick are the only agricultural implements. The great heat and moisture with the comparatively uniform temperature all the year round enable a constant succession of vegetation, and trees may bear fruit at all seasons. The soil is in general very fertile, but large areas of the country are covered with savannas with sandy and gravelly soil, which is entirely unfit for cultivation and produces only scanty grass, pines, oaks, and various species of scrubby plants. The Indians from this part of the country are therefore compelled to make their planta-

1: Conzemius M-4, 5 (1921) 1932
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276 Still, it is not certain that tobacco was known to these two tribes in pre-Columbian days. Their names for the plant (M.: *twako;* S.: *aka*) point toward its introduction by the Europeans. The Indian tribes living on the Pacific side of Nicaragua at the time of the discovery knew tobacco, however, and they smoked it in the form of cigars. Our name "tobacco" comes from the word *tabaco*, which the Indians of Haiti applied to a sort of pipe. This instrument consisted of a small wooden tube, shaped like a Y; the two points of it were inserted into the nose, while the other extremity was held in the smoke of burning tobacco, and thus the fumes were inhaled.

At the present time the plant is not cultivated by the Indians under consideration. Leaf tobacco is imported from the United [439] States, and this foreign product is preferred to the one raised in Central America. Among the Sumu smoking is confined principally to the men, but this practice is common enough among Miskito women and children. The leaf is smoked chiefly in pipes (M.: *twako mina;* S.: *aka pan, aka pana*), which are made locally of clay, wood, or maize cobs; imported clay pipes are also bought in the shops. According to Wickham (c: 206), the Ulwa of Rio Escondido do not smoke the pipe, but use the leaf rolled roughly in cigar form made on European models. Very few chew tobacco, while the habit of snuffing is entirely unknown. Among the females the pipe is frequently passed round, each one of the women present taking a few puffs and then passing the pipe to her neighbor. A supply of tobacco is a readily accepted currency for the acquisition of food in the more primitive parts of the country. For small favors the traveler is also expected to give one or more tobacco leaves in exchange.

263 CAYENNE OR RED PEPPER.—Various species of very pungent, small red peppers (M.: *kuma;* S.: *anmak, añmak*), growing in a semiwild state on perennial shrubs (*Capsicum frutescens* L. and *C. baccatum* L.), are used with food as a stimulant and as an excitant. They were found in the Miskito kitchen during the times of Dampier (I, 9).

The Miskito usually prepare a "sauce" (M.: *kuma laya;* S.: *añmak wasni, añmak waska*) with these peppers, which they mash and then add some lime juice and salt. They store it in bottles and pour a small quantity of the liquid on their food while eating. The Sumu, on the other hand, grind the red peppers on the metate together with coarse salt. Upon serving the meal the women place a little of this mixture on a large leaf, and every one seasons his own food. These peppers may also replace salt entirely. The large "sweet" chilies (*Capsicum annuum* L.), which grow on annual plants, are also occasionally planted and eaten as a vegetable.

from the waist to the knees. Bark cloth is still used and is an excellent clothing material; tumu bark being the most commonly used. However, today both men and women obtain cheap cotton material from traders and with it fashion their clothes. No undergarments are worn. In former times gala costumes were worn at festivals; today the chiefs or head men will wear old coats obtained from foreign residents. Many Indian men buy hats, especially straw ones *(sombrero, sumruru, sumuru, trahat, tarahat)*. Women occasionally wear these hats, which constitute to them an ornament. Some Indians in villages wear footgear but this is rare. Most of them go barefoot. The washing of clothes is the women's work and it is done by beating the garments at river banks with wooden clubs *(tamtam)* and the use of soap made from the leaves and fruits of a small bushy tree *(Sapindus saponaria* L.).

In a previous report by Conzemius[1] it was stated that the black and red paint was applied to the skin as an ornament. This was in 1931; today this process is rarely executed although some still apply a reddish pigment (varying from yellow to brown) in order to protect against insects or the chapping effects of weather. The pigment is derived from the seeds of a shrub called annato (Spanish: *achote, achiote,* or *bija)* or rocour *(Bixa orellana L.)* The seeds are removed from the capsule and placed in boiling water. The red waxy material which separates is collected and coagulates when mixed with the leaves of the *tiswat* tree. It is usually mixed with one of the native vegetable oils prior to use. Black paint derived from tree gums are used by the Sumu as well as colored clays. In fact, colored clays have gained considerable favor during these later years.

Tattoo is rarely seen among the Río Coco inhabitants, even though it was commonly used. It is achieved by the simple method of puncturing the skin with steel needles and the application of gun powder into the incisions. Today necklaces and other decorations are rarely seen. Bead and shell necklaces were observed only on a few persons in the upper Coco River. In general one sees a few trinkets used which were obtained from traders.

The men cut their hair short and some of the tribal elders leave a lock of it just back of the crown of the head. The women have long hair except in front where it is common custom to cut just above the eyebrows. This prevents the hair from entering the eyes. Both sexes devote much care to the hair and oil it frequently. The oil *(batana)* is obtained from the seeds of the oil palm *(Elaeis melanoccoca)* and is mixed with rather potent perfumes obtained from traders. From these traders they also obtain inexpensive combs and brushes.

Although body deformation was carried out by Sumu especially

3: Pijoan D-5 (ca. 1945) 1946
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TOOLS

Before the conquest the Miskito had very few tools and as has been pointed out by Conzemius[1] these Indians were living in a wood age rather than a stone age. Today the common tools in use are noted in the order of their importance. The machete *(ispara)*, a heavy knife varying from one to two feet in length is the most commonly used tool. It can be used for almost any purpose from clearing bush to ligging postholes. It can also be used as a weapon of defense as well as for cutting and slicing food. Second to the machete is the ax *(asa)* which is used for chopping trees and preparing timber. These axes are made of metal and stone *(alwani mahbra)*. Adzes *(ats)* are today in common use for the making of boats and other objects of wood. With the exception of the stone ax both the machete and the adze are of post Colombian origin.[1] Hoes have been introduced in the last century and these are used primarily for clearing weeds. A variety of knives *(skiro, kisuro)* are seen in all households and used not only to cut with for eating purposes as well.

DIVISION OF WORK

The husband prepares the patch of forest for the plantation. He cuts down the trees and clears the ground by fire. However, the major part of planting, weeding, and taking in the crop is left to the wife. The manufacture of hunting and fishing implements is the man's job. Fishing, however, is carried out by both men and women. The building of canoes is the man's work although women sometimes assist him in this arduous work. Men will cut trees for firewood but the women have to fetch the lengths of timber cut by the men.

It is customary for women to carry heavy loads but the men occasionally do. Heavy loads are placed on the back by the use of a carrying strap (*bombador*). Many of the women carry loads on their heads.

All the domestic industries such as weaving, spinning, cooking, etc., are female occupations. Tailoring, however, is shared by both the men and the women. The barbecuing of the chase is the only cooking men indulge in.

FUNCTIONAL ENTERPRISE

Interchange of commodities is commonly effected by barter but today there is an ever increasing use of currency (córdoba). Trading is carried out with traders and the Indians in many instances exchange

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cattle and other goods for objects of cheap manufacture. Yet these objects may be of real intrinsic value to the Indians and under such circumstances it is difficult to judge with fairness. However, in the larger settlements Indians have learned the true cost of materials and considerable agitation occurs in trading. Payment for services performed in isolated communities can be accomplished by the use of such commodities as salt and tobacco. In fact, many will prefer these to actual money: in the more remote areas money per se is meaningless and payment is performed with gifts.

These days there is an ever increasing want of objects from the outside world. The items most desired are salt, machetes, axes, knives, adzes, hoes, iron cooking pots, stoves, fish hooks, files, shotguns, ammunition, cotton goods, ribbons, blue dungarees, looking glasses, combs and tobacco. Cereal grains and flour are also desired.

The enterprise of the Indian today is centered mainly around the creation of useful objects. Such objects, therefore, are often used for exchange purposes. Stone work is limited to the manufacture of crude metates or maize grinders (walpa-akbaya) which are used for grinding maize. In the northern part of the Miskito coast a coarse brownish cloth is pounded from the inner bark of a tree closely resembling the rubber trees (*Castilla* sp.). The cloth as well as the tree is referred to as *tawa* or *tikan*. The bark cloth is made into sheets or blankets for bed use or into loin cloths (*palpura*). This cloth is of high value. Pottery once a valuable commodity to these Indians is not alonger made.

Today the main enterprise for the Miskito Indians for barter, exchange or payment are as follows: rubber collecting, banana agriculture, boat making, mine working, cattle and pig raising, general work on rivers, fur from wild animals, and general labor. However, it is to be noted that the Indian could and does in most instances subsist on his immediate environment.

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Agriculture is not highly developed on the Mosquito coast, because the many plant-destroying insects limit the process of cultivable products, and the bush springs up early after the ground has been cleared. Thus after two or three crops have been obtained from a plantation (*banana*), a variety of weedy looking shrubs and grass, which make cultivation difficult, gets a hold on the land. The Indian then does not consider it worthwhile to undertake the labor needed to keep the ground clear but prefers to set up a new plantation (*insla*) by cutting down a patch of usable forest.

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These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wáikna pán;* S.: *al yamni, al yamka*).

All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

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DIVISION OF LABOR

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DOMESTIC WORK.—Such domestic industries as spinning, weaving, and the manufacture of pottery, bark cloth, and bead ornaments are female occupations. Tailoring is, however, frequently in the hands of the men, some of whom even make the clothes for their wives. The preparation of food is strictly reserved to the women, the men never condescending to do any cooking, except while away from home. The barbecuing of the chase is, however, the work of the men.

FIELDS.—The husband prepares a patch of the forest for the making of a plantation, by cutting down the trees and cleaning the ground by burning; but the care of the field, that is the planting, weeding, and reaping of the crop, is left to the women.

OTHER OUTSIDE OCCUPATIONS.—The manufacture of fishing and hunting implements, and of canoes and accessories thereto, are man's work. The women fish with the hook, but all other methods of fishing are reserved to the men. The latter fell trees for firewood and cut them into convenient lengths to haul, but the females have to fetch and split it. The woman goes to the waterside to bring the game which her husband has killed and brought in his canoe, but she never accompanies him on the actual hunt, being unacquainted with the handling of hunting weapons.

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LOAD CARRYING.—The carrying of heavy loads is usually left to the women. For this purpose they use a carrying strap, known by the local Spanish name "bombador" or "bambador." The latter consists of a narrow strip of bark cloth, both extremities of which are attached to the burden. The load is first lifted on the back with the assistance of another person and then the pack strap is put around the forehead. The male Indians do not carry anything in this manner, but they secure the package to the back with the aid of shoulder straps, as do the Ladinos. The Spanish-speaking women, however, carry loads generally upon the head, as is the case with the negroes of both sexes. When very tired the Indians give a sort of whistle to catch their breath (M.: *wiñka puhbaya;* T. & P.: *wiñka urupdanin;* U.: *wiñka urupdanaka*, lit.: "to blow the breath").

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DAY LABOR WORK.—In former days many young Miskito, living to the west of Cabo Gracias a Dios, went annually to British Honduras to work there in the mahogany or logwood camps. They left about May and returned in November or December. During this time the settlements on the coast were practically without male inhabitants, except for the boys and old men. The women then had to subsist on fish, crabs, oysters, cockles, the eggs of alligators, turtles, and iguanas, and vegetable food. Now all these Indians easily find work in their own country, either in the mahogany camps or in the

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1: Conzemius M-4, 5 (1921) 1932
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323 the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many 323 parts of the Mosquito Coast, chiefly in old burial grounds, indicate 172 a much greater skill in this art than that possessed by the present- 531 day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, 172 probably the Sumu territory, the discovery of human heads, busts or 532 entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

248 CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving 286 it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: 462 II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

TYPES OF FABRICS.—The elder Sumu women still weave cotton 286 into loin cloths (M.: *palpura;* T. and P.: *dŏh;* U.: *ani*), girdles or

3: Pijoan D-5 (ca. 1945) 1946
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VEGETABLE FOODS

Agriculture is not highly developed on the Mosquito coast, because the many plant-destroying insects limit the process of cultivable products, and the bush springs up early after the ground has been cleared. Thus after two or three crops have been obtained from a plantation *(kanana)*, a variety of weedy looking shrubs and grass, which make cultivation difficult, gets a hold on the land. The Indian then does not consider it worthwhile to undertake the labor needed to keep the ground clear but prefers to set up a new plantation *(insla)* by cutting down a patch of usable forest.

3: Pijoan D-5 (ca. 1945) 1946
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262 ralization can be directly applied to diets in the tropics: the galaxy of
177 nutritional factors are determined by the local situation and the food habits of the people.

164 The same can be said of tropical infectious disease. The variety of vectors, their ecological relations to circumstances determined by altitude, rains, swamps, climate and vegetation limit disease entities to special regions even though many diseases occur throughout the world. It must be remembered that to the diseases generally present among people are added those which are peculiar to a new environment and that modifications of a disease can take place. For instance, whooping cough is a serious disease attended with a high mortality rate in Central Nicaragua, whereas scarlet fever produces a mild disease often unrecognized. Whether the host or the organism is responsible for such a condition is not known and the problem of host and parasite interrelationships becomes a complex one.

THE MOSQUITO AREA: THE LOCAL SITUATION

101 The vast region on the Atlantic side of Nicaragua and Honduras is known by the name of Mosquito coast. It is inhabited buy four different tribes of Indians: The Miskito, the Suma (Sumu), the Paya, and the Rama. In some localities the Miskito, often incorrectly called
[144] Mosquito, have a considerable admixture of Negro blood and, for this reason, are in some places called Zambos. The other three tribes, however, are practically of pure Indian blood. In earlier times, the
101 western region of the Mosquito coast was occupied by the Matagalpa
197 Indians, whose language extended over a large area in Nicaragua and Honduras, but has been extinct for nearly half a century. However, a dialect of its is spoken to this day by the older inhabitants of the Salvadorean villages of Cacaopera and Lislique. Today the Indian languages of the area are somewhat interrelated, especially Matagalpa, Miskito, and Suma; Paya is an unrelated language.

101 The Miskito and small isolated bands of Suma Indians inhabit
361 the eastern side of Honduras and Nicaragua. They are found from the Río Tinto (lat. 15° 50′ N.) to Río Punta Gorda (Lat. 11° 30′ N.). The villages are located chiefly along the banks of the rivers as far up as the headwaters within the jungle proper. The Suma Indians are found primarily in the interior; they are somewhat uncommunicative, but cooperative. The Miskito are self-sustaining and at times derive ad-
[146] ditional income from labor with fruit companies, mining enterprises and rubber collecting agencies. Today they play an important part in the wild rubber collection program.

1: Conzemius M-4, 5 (1921) 1932
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224 coarse and unhealthy and even is taboo. The Miskito call it *tilba*, which name is already mentioned at the end of the seventeenth century in the form *tilbu* (M. W.: 311).

LIZARDS.—The largest lizard is the green iguana (*Iguana tuberculata*) which is generally shot while feeding on the river banks or in the branches of some overhanging tree. Sometimes it tries to escape by dashing into the water, where the Indians attempt to catch it by diving after it. It is sometimes kept alive by the Indians until required for food. For this purpose they break the thighs and arm-bones, and put the backbone out of joint; or else they twist the legs and tie the front ones over the back and the hind ones over the tail by their own sinews. The poor animal is thus unable to run away. The eggs of the iguana are also highly esteemed.

BIRDS.—Various species of guans (*Penelope*, *Ortalis*, *Pipile* [49]), the yellow-crested black curassows (*Crax* sp.), mountain hens (*Tinamus* sp.), quails (*Ortyx* sp.), partridges (*Odontophorus* sp.), pigeons (*Colomba* sp.), and wild ducks (*Cairina moschata*) are esteemed as game birds.

224 RETURN FROM THE CHASE.—After the chase the game is carried on
482 the back to the canoe. When a large animal, as a peccary, has been killed each fore and hind foot are tied together with the aid of withes. The Indian, putting his arms through the loops thus formed, with the beast's head downward, carries it on the back, as if shouldering a knapsack. A strap passing over the forehead may also be attached to help support the load. If the hunters are unable to carry all the game at one time the remainder is hung on the branches of some tree, to keep it out of reach of prowling animals.

224 Arrived at his settlement, the Indian merely takes his arms and paddle and walks home, sending his wife down to the waterside to fetch the game. The hair of the latter is then singed by a fire made in the open. The neighbors, who are generally near relatives, receive a share of the meat.

261 Then a big pot is put on the fire, for the Indians do not think of the morrow and, if possible, consume all the meat at once. The women and children do not have patience enough to wait until it is cooked, but they cut off small slices, which they roast over the hot coals and eat, with a few bananas or plantains. If they are unable to dispose of all the supply on the first day the remainder is barbecued without salt over a slow fire. (See Culinary Arts.)

224 HUNTING CHARMS.—Many charms are used for luck in hunting.
777 Stones or pebbles, found in the stomach of certain animals, are

[49] The large guan (*Penelope* sp.) is called *kwamu* by the Miskito, a name found already by M. W. (311) in the form *quawmoes*.

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*). 301

Black paint is smeared over the body by the men (*Sumo, Mosquito, Paya*) as a decoration and for protection from insects. Geometrical designs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* and *Paya* tattooed geometrical designs upon the face, arms, and breast. The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head. 302 [751] [751] 304

TRANSPORTATION

Loads are carried with a band passing over the head (women) or across the chest (men). Children are carried on the back in a blanket, the points of which are tied in front. 482 [855] [987]

The country has hunting trails but no roads. Most travel is done in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea. 501

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such. 285

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved wooden mallet. 287

Weaving.—Cotton is spun on a spindle, which has a whorl and is rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric. 286

Ceramics.—Pottery making has been described only from the *Sumo* and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base. 323

Miscellaneous manufactures.—Metates are still used by the *Paya* and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles. 415

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

TOOLS

Before the conquest the Miskito had very few tools and as has been 442
pointed out by Conzemius[1] these Indians were living in a wood age rather than a stone age. Today the common tools in use are noted in the order of their importance. The machete *(ispara)*, a heavy knife varying from one to two feet in length is the most commonly used tool. It can be used for almost any purpose from clearing bush to ligging postholes. It can also be used as a weapon of defense as well as for cutting and slicing food. Second to the machete is the ax *(asa)* which is used for chopping trees and preparing timber. These axes are made of metal and stone *(alwani mahbra)*. Adzes *(ats)* are today in common use for the making of boats and other objects of wood. With the exception of the stone ax both the machete and the adze are of post Colombian origin.[1] Hoes have been introduced in the last century and these are used primarily for clearing weeds. A variety of knives *(skiro, kisuro)* are seen in all households and used not only to cut with for eating purposes as well.

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The husband prepares the patch of forest for the plantation. He 462
cuts down the trees and clears the ground by fire. However, the major part of planting, weeding, and taking in the crop is left to the wife. The manufacture of hunting and fishing implements is the man's job. Fishing, however, is carried out by both men and women. The building of canoes is the man's work although women sometimes assist him in this arduous work. Men will cut trees for firewood but the women have to fetch the lengths of timber cut by the men.

It is customary for women to carry heavy loads but the men occasionally do. Heavy loads are placed on the back by the use of a [482]
carrying strap (*bombador*). Many of the women carry loads on their heads.

All the domestic industries such as weaving, spinning, cooking, etc., are female occupations. Tailoring, however, is shared by both the men and the women. The barbecuing of the chase is the only cooking men indulge in.

FUNCTIONAL ENTERPRISE

Interchange of commodities is commonly effected by barter but 439
today there is an ever increasing use of currency (córdoba). Trading is carried out with traders and the Indians in many instances exchange

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them. White thread and small needles (M.: *silak;* T., P.: *silip;* U.: akues, from Spanish "aguja") of foreign manufacture are employed to string the beads.

NAVIGATION AND CANOE MAKING

Travel is effected chiefly by canoe, for there are hardly any roads in the country outside of the hunting trails; the numerous navigable rivers intersecting the country form, together with the lagoons and the sea, the means of communication.

The Miskito inhabiting the immediate seashore from Cabo Gracias a Dios on southward are excellent seamen; they were already noted for their courage on the sea by the buccaneers (Raveneau de Lussan: 440). The Miskito living to the north of that settlement, however, navigate the lagoons and rivers, and rarely venture on the sea. The Indians living inland, on the other hand, are afraid of the sea and of the large lagoons, but they are perfectly at home in the bush, and they are very expert in navigating the river boats through the dangerous falls and rapids.

BRIDGES.—The liana bridges, which are met with in other parts of Central America, are unknown on the Mosquito Coast. The Miskito and Sumu occasionally make a crude bridge over a narrow creek by felling a tree across it. Canoes are used everywhere for the crossing of the streams.

TYPES OF CANOES.—Two sorts of dugout canoes are used on the Mosquito Coast. The "dori," or keeled canoe, is used to navigate the sea and lagoons, while the "pitpan," or flat-bottomed canoe, is employed on the rivers. The sea canoes are fast sailors, but somewhat "cranky." All these boats are hollowed out by means of the adze; the largest specimens, cut out of the solid tree, without any addition, may reach up to 5 feet beam and 40 feet in length.

PITPAN.—The "pitpan" is a long narrow boat with flat bottom, drawing but little water; it is therefore particularly fitted to navigate the shallow creeks of the interior which abound in rapids and falls. It glides noiselessly over the water and is easily steered, but it is very cranky and the slightest motion renders it liable to upset. It is therefore of no use on the sea. The pitpan has a square projecting bow and stern, like a small platform, large enough for a person to stand on. A hole is made in the bow through which a pole is thrust perpendicularly in the ground, to moor at river banks or at shoals. The pitpan is very thick bottomed, and for that reason may sustain very rough handling in hauling it over the rocks at rapids and falls.

The name "pitpan," which is in general use among the English-speaking population of eastern Central America, is taken from the Miskito word *pitban*, which means plaited. It is claimed by some

3: Pijoan D-5 (ca. 1945) 1946
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were dying out rapidly, which may account for the lower figure now given. The Rama tribe, of about 200 members, living along the lagoons near Bluefields, has become a sort of slum population; its existence on the edge of the rough seaport village subjects it to the whims and volition of all and sundry. From the Río Tinto northward live the Black Caribs, descendants of the aborigines of St. Vincent Island. In and about Bluefields, Pearl Lagoon, San Juan del Norte, and on the islands, the inhabitants are largely mulattoes; Negroes as well as mulattoes are also found in the coastal towns.

MORPHOLOGICAL CHARACTERISTICS OF MISKITO AND SUMU

The Miskito Indian is generally well built, of middle height whereas the Sumu Indian is rather thickset and of lower stature. Both are proportionally broad shouldered, have beep chests and are heavy muscled. Schultz[20] found the average measure of the adult Sumu and Rama to be 1.5816 m. It is also obvious to any observer that the arm and chest muscles are developed somewhat out of proportion to the leg muscles. This may be due to the fact that these people are essentially canoe (pipante) folk whose chief method of travel consists of river boating. In fact, most of their enterprise is carried out by the use of a boat and the use of arm and torso muscles any exceed those of the lower extremities.

In our studies at Waspam and Saulpuca the weights and heights were noted in a series of individuals with reference to their age. It is apparent that diet plays a role in development[22] but since it will be shown later that the nutrition of these people is adequate in the light of present day criteria, the figures reveal presumably the inherent constitutional morphology of surface area. And since the changes in height and weight vary with the age of the individual it is important to take this factor into account.

It is to be noted that the figures are averages and do not reveal variation. Since the major part of growth occurs between birth and twenty years of age[23] the values given represent the peak of surface area development and the initial phases of further weight gain. However, measurements are no better than their definition and the indivi-

[22] Palmer, C. E. Growth and the economic depression. Pub. Health Reports. 1934, *48*, 1277-1292.

[23] Krogman, W. M. The Growth of Man. Tabulae Biologicae. 1941-42, *20*, 1-967. Junk, Den Haag, Noderlands (delayed in press because of war).

[24] Krogman, W. M. Human Growth. Ciba Symposia. 1943, *5*, 1458-1485.

1: Conzemius M-4, 5 (1921) 1932
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133 In front of the coast, especially from Caratasca Lagoon to Monkey Point, or Punta Mico, are scattered numerous small islands, cays, coral reefs, shoals, and sand banks, which render navigation rather difficult.

The land rises gradually from the sea. The transverse ranges, radiating from the principal chain in the interior, form a series of terraces which gradually lessen in elevation until they disappear in the low coastal region. Low hills are met with at about 100 to 150 miles inland. Small isolated hills exist at different points within a short distance from the shore, and at Punta Mico and westward of Iriona spurs of the great central chain extend to the sea.

There are no active volcanoes. Earthquakes are not of frequent occurrence and they never do any damage; the heavy thunder occasionally conveys the impression that the earth is shaking.

133 487 HYDROGRAPHY.—The whole of this area is well watered by numerous streams running nearly parallel to each other; they flow into the Caribbean Sea, or rather into a chain of so-called lagoons or brackish water seas, of which the largest one is that of Caratasca. These water sheets are situated parallel with the coast and are separated from the sea, as well as from each other, by low, narrow, sandy necks of land, called locally "haulovers," from the custom of dragging the canoes over them. Thanks to this inland water system, canoes may proceed in smooth water, except for short intervals, from Iriona to Bluefields, thus avoiding the dangerous and unpleasant sea voyage during rough weather.

The rivers are in many parts the only means of communication. In the lower part of their course they are navigable for small sailing vessels, flat-bottomed steamboats, and motor boats. Beyond the region of the falls and rapids only small canoes and pitpans may continue, and they with great difficulty. The largest rivers of the Mosquito Coast are the following: Aguan, Tinto, Patuca, Coco (or Wanks), Grande (or Great), Escondido (or Bluefields), and San Juan.

During flood times these streams rise tremendously, occasionally as much as 40 feet during a single night. The crumbling banks bring down trees which, sweeping down the rapid current, render navigation dangerous. At places where the banks are low the neighboring country is inundated. These floods disappear as rapidly as they come. Owing to the great variations in level to which these rivers are subject, traffic is stopped or impeded occasionally; during the rainy season on account of the great impetuosity of the water and during the dry season from inadequate draft. In this respect Rio San Juan is an exception, the steadiness of its flow being maintained by the two great lakes of Nicaragua which act like a reservoir, and of which it is the only outlet.

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The sediment, trees, logs, and the like, brought down by the rivers are deposited at their mouth at the sea, thus forming dangerous sand banks with only a few feet of water, which can be crossed in safety only by vessels of little draft. These openings into the sea, or bars, as they are called, are much safer when the streams flow first into a lagoon, instead of directly into the sea, for in that case the sediment is deposited in the lagoon.

CLIMATE.—The climate of the country is tropical, but it is greatly modified by the configuration of the soil and the prevailing winds. The nights are always cool. The average temperature is about 80° F. (26° C.); the thermometer rarely registers higher than 90° F. (32° C.) or falls below 65° F. (17° C.). January is the coldest month of the year.

The country is not as unhealthy as is generally supposed. The old English authors considered it fairly good, and there is no justification for the bad reputation it has now, not only among Europeans and North Americans but also among the Central Americans inhabiting the highlands of the interior or the Pacific slope. Numerous foreigners have lived in the country many years and have retained their health. Unless one is particularly susceptible to malaria or other tropical diseases, no bad effects are liable to attend a prolonged sojourn in the country, provided proper care is taken.

The cool sea breeze, which blows almost constantly around the lagoons, renders the air fresh and agreeable. During eight months of the year the east trades blow nearly uninterruptedly and greatly modify the effects of the heat, so that the latter is never suffocating. The great difference from our own climate does not consist so much in the higher temperature recorded as in the absence of really cold weather, which contributes so much to the vigor and "pep" of northern people.

From November to February northers may appear on the Nicaraguan coast, but they are not so dangerous to navigation as on the shore of Honduras. During a wet norther the weather is disagreeably cold, but a dry norther is pleasant and invigorating. From the middle of June to the middle of August the Nicaraguan coast is subject to squalls and sudden gusts of wind from the southeast and the south, which are a great danger to seagoing canoes. Revolving storms, commonly called hurricanes, occur occasionally on the coast, but they are never so violent and destructive as in the West Indies or around the Gulf of Mexico.

RAINFALL.—One may practically speak of two dry and two wet seasons on the Mosquito Coast. But these seasons are not well defined; the change from the rainy to the dry period, or vice versa, is not as marked as in the interior of Central America or on the Pacific

1: Conzemius M-4, 5 (1921) 1932
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4 o'clock; that is when the animals and birds are feeding. During the remainder of the day the forest is quiet, and most of the birds roost in the dense treetops.

TRAVEL TO THE HUNTING GROUND.—Travel is effected chiefly by small pitpans, for the Indians are canoe men by necessity, the rivers being their roads. They leave their boat at a certain spot, the parting point of a trail leading to a good hunting ground, that is, a region abundant in fruit trees. To a stranger such hunting trails are barely perceptible; here and there marks on trees made with the machete and broken twigs indicate the direction. The Indians always travel in single file, even when there is a broad road, or when they traverse open country. In marching they always glance at the sun and they observe the direction the clouds are moving, that is from northeast to southwest on the Mosquito Coast. Intuitively they keep in their mind a mental picture of the direction they came from. They walk along, silent and watchful, and at times stand still to listen.

STALKING.—The Indian is an expert stalker, but not a true sportsman; he rarely shoots at the game while it is in motion, except in the midst of a flock of flying birds. He therefore rarely misses the mark, but is not necessarily a good marksman. Owing to his scarce clothing he moves about the forest without making any noise. His color also appears to a certain degree to assimilate with the forest.

IMITATING THE CALL OF THE GAME.—The Indian huntsman imitates the call of animals and birds, in order to call them within arrow or gun shot. Bone whistles (M.: *kyaki wasbaya;* S.: *malka kuñ*) are used to lure the agouti (*Dasyprocta* sp.) under certain trees at the time when the latter drop their fruits. This trick is especially successful during the pairing season of certain animals. The Indian is thoroughly acquainted with the habits of the game.

HUNTING DOGS.—A lot of skinny, mangy dogs, esteemed for their skill in stirring up the game, are found in the Indian villages. With the aid of large dogs trained for the purpose, the jaguar is cornered and the puma is driven up a tree, where it may easily be shot by the hunter. When the Indian ascends a stream he keeps close to the river bank and lets his dog range the woods. The latter, upon scaring up some game, will give tongue immediately and endeavor to drive it to the water. This is the common way of hunting the paca which lives at the river bank and plunges into the water when pursued. This rodent also enters hollow trees and burrows in the ground and is then difficult to secure. Its meat is delicious and is appreciated by the average foreigner.

Before leaving for the chase the dog's snout is rubbed with certain herbs, so that the game shall not be able to smell it. This procedure is also supposed to clear the scent of the dog and sharpen his perceptions. An infusion from a small parasitic plant, called in Spanish

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
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signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [531]
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Loads are carried with a band passing over the head (women) or 482
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the points of which are tied in front. [987]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

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Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 283
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Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

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3: Pijoan D-5 (ca. 1945) 1946
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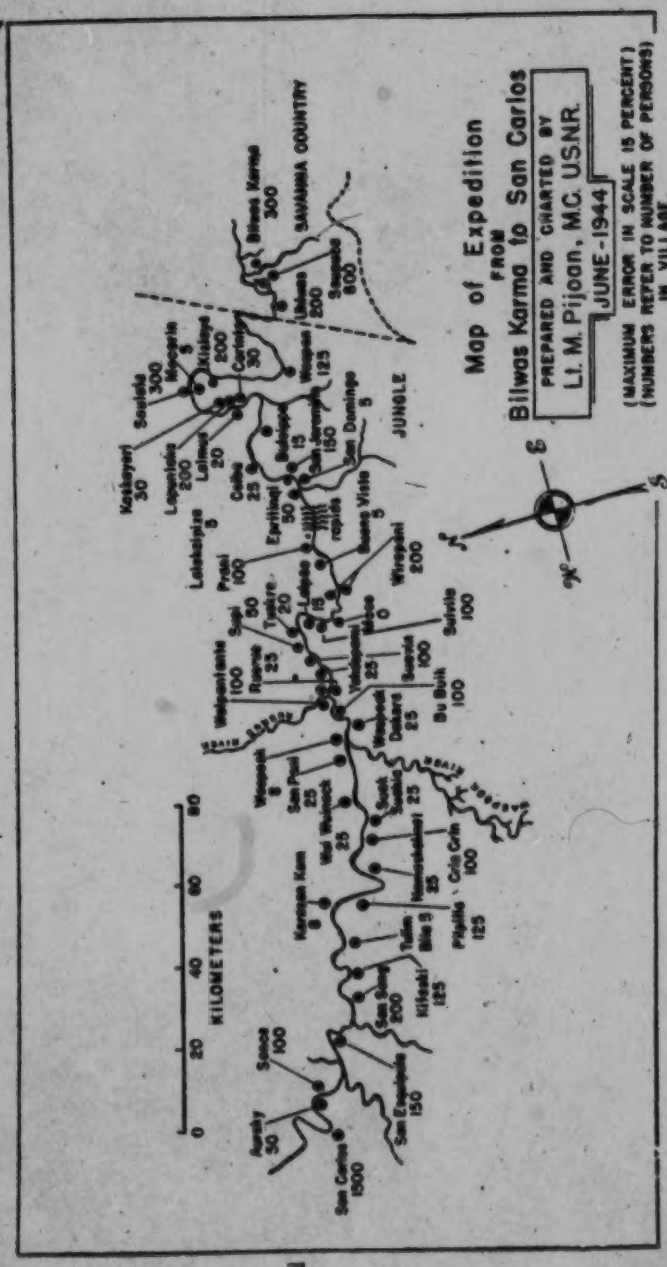

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3: Pijoan D-5 (ca. 1945) 1946
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The Miskito Indians, numbering about 20,000, are a mixed race, since there has been much inter-marrying with negroes, creoles, Spaniards, Caribs, Sumu, Syrians and Chinese. About one-half of them have negroid physical characteristics, another third non-specific physical features and a few appear to be of pure Indian blood. There is, however, the same behavior pattern in all of them; they live together and there is no cultural differentiation on a physical basis. The culture and language are predominantly Indian, though some of them speak a little English or Spanish. The name "Mosquito Coast" may have been derived from the Indian tribe, the Miskito, or it may have been derived from the numerous mosquitoes found in the area.

The climate is humid and tropical. The average temperature along the seacoast rarely registers below 65° F. or above 90° F. Such pleasant temperatures are due to the trade winds that blow fairly steadily for about seven months of the year. From Bilwas Karma inland, the heat is intense, humid, and at times unbearable. At higher altitudes near the headwaters of the Coco (or Wanks) River, conditions are less severe. The whole area is well watered by many streams which empty into the larger rivers, which in turn drain into the Caribbean sea. In the jungle area these rivers are the only means of communication or transport. During flood times the rivers rise tremendously, often as much as thirty feet in a single night, the crumbling banks bringing down trees and everything along the edge. For this reason the villages are built high up on the banks and usually some distance from the stream. The average rainfall is reported to vary from 250 to 320 inches a year. There are two dry and two wet seasons each year, but these conditions are only relative, since it is always humid in the interior. The dryest seasons are from about March to May and from late August to early October. The remainder of the time it rains almost incessantly, sometimes all day. In the dry season light showers occur frequently. These geophysical conditions contribute significantly to the food-agricultural status of the people.

Geographically the area can be divided as follows: along the seashore it is sandy, with an inland belt of about twenty miles, consisting of swamps; then an area fifty to one hundred miles wide of intermittent savannah, and finally the thick, dense, somewhat impenetrable jungle which covers everything, even the mountains. Violent winds and hurricanes are not infrequent.

Besides the Miskito and the Sumu, two other Indian tribes, the Paya and the Rama, live in eastern Nicaragua. The population of these tribes is unknown, but it is considered to be about 500. Conzemius[1] reported in 1932 that they numbered about 700 but stated that they

1: Conzemius M-4, 5 (1921) 1932
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531 [439] them. White thread and small needles (M.: *silak;* T., P.: *silip;* U.: *akusa,* from Spanish "aguja") of foreign manufacture are employed to string the beads.

NAVIGATION AND CANOE MAKING

484 Travel is effected chiefly by canoe, for there are hardly any roads in the country outside of the hunting trails; the numerous navigable rivers intersecting the country form, together with the lagoons and the sea, the means of communication.

The Miskito inhabiting the immediate seashore from Cabo Gracias a Dios on southward are excellent seamen; they were already noted for their courage on the sea by the buccaneers (Raveneau de Lussan: 440). The Miskito living to the north of that settlement, however, navigate the lagoons and rivers, and rarely venture on the sea. The Indians living inland, on the other hand, are afraid of the sea and of the large lagoons, but they are perfectly at home in the bush, and they are very expert in navigating the river boats through the dangerous falls and rapids.

491 BRIDGES.—The liana bridges, which are met with in other parts of Central America, are unknown on the Mosquito Coast. The Miskito and Sumu occasionally make a crude bridge over a narrow creek by felling a tree across it. Canoes are used everywhere for the crossing of the streams.

501 TYPES OF CANOES.—Two sorts of dugout canoes are used on the Mosquito Coast. The "dori," or keeled canoe, is used to navigate the sea and lagoons, while the "pitpan," or flat-bottomed canoe, is employed on the rivers. The sea canoes are fast sailors, but somewhat "cranky." All these boats are hollowed out by means of the adze; the largest specimens, cut out of the solid tree, without any addition, may reach up to 5 feet beam and 40 feet in length.

PITPAN.—The "pitpan" is a long narrow boat with flat bottom, drawing but little water; it is therefore particularly fitted to navigate the shallow creeks of the interior which abound in rapids and falls. It glides noiselessly over the water and is easily steered, but it is very cranky and the slightest motion renders it liable to upset. It is therefore of no use on the sea. The pitpan has a square projecting bow and stern, like a small platform, large enough for a person to stand on. A hole is made in the bow through which a pole is thrust perpendicularly in the ground, to moor at river banks or at shoals. The pitpan is very thick bottomed, and for that reason may sustain very rough handling in hauling it over the rocks at rapids and falls.

The name "pitpan," which is in general use among the English-speaking population of eastern Central America, is taken from the Miskito word *pitban,* which means plaited. It is claimed by some

1: Conzemius M-4, 5 (1921) 1932
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milked, their owners being unwilling to "rob" the calf, but the meat is esteemed.

HORSES.—Horses (M.: *aras*, from the English "horse") are not common, while mules and donkeys are conspicuous by their absence. The horse is sometimes used as a riding animal by the savanna Indians, but loads are transported either by canoe or on man's back. The Indians ride bareback and use a sort of bridle consisting of a rope made from bark fiber, which is tied loosely round the lower jaw, leaving two ends for reins. When swimming the horse in deep water, the rider gets off its back, at the upside in case of a running stream, and swims beside the animal, holding on by its mane. As soon as the horse touches bottom he gets on again. The manner employed in breaking a young horse is very simple. One man leads it with a rope into the water, to a depth of 3 or 4 feet. Then another man quickly jumps upon its back, whereupon the frightened animal begins to buck and skit. After a while it is completely exhausted and docile.

PIGS.—Pigs (M. and T.: *kwirku*, from the Spanish "puerco"; P. and U.: *kusi*, from the local Spanish "cuche") were already found occasionally among the Miskito at the end of the seventeenth century (M. W.: 310). Pork is rarely eaten by the Indians, and fattened hogs are sold to the foreigners and Ladinos. Little care is given to these animals; they are left to roam around and find a large part of their food themselves. At night they are kept in a pen adjoining the dwelling, or they are brought inside and tied to a post on account of the various felines preying upon them.

FOWL.—The domestic fowl (M.: *kalila*, from the Spanish "gallina") is found in every house. It is esteemed chiefly on account of the crowing power of the cock, which serves as a clock at night. The Miskito had already some fowls at the end of the seventeenth century (M. W.: 310). Among the Sumu this bird is called *sakara* and *katarama;* these appear to be onomatopœic names, and similar terms are met with in other parts of Central and South America.

DOGS.—In every Indian dwelling there roam about some sneaky, repulsive curs, ready to steal if they are left unwatched for an instant. They are kept as pets, as watch dogs, but above all, for the chase. Good hunting dogs, especially such as are trained to hunt the jaguar or the puma, are very highly valued. The Indians feed them but little, fearing that they will lose all interest in hunting. The dogs are therefore very lean and the bones of the long, thin body generally appear distinctly beneath the skin. They roam about the house during the night and make their lair at the foot of that of their masters; they are responsible for the bloodthirsty fleas which abound in the Indian dwellings.

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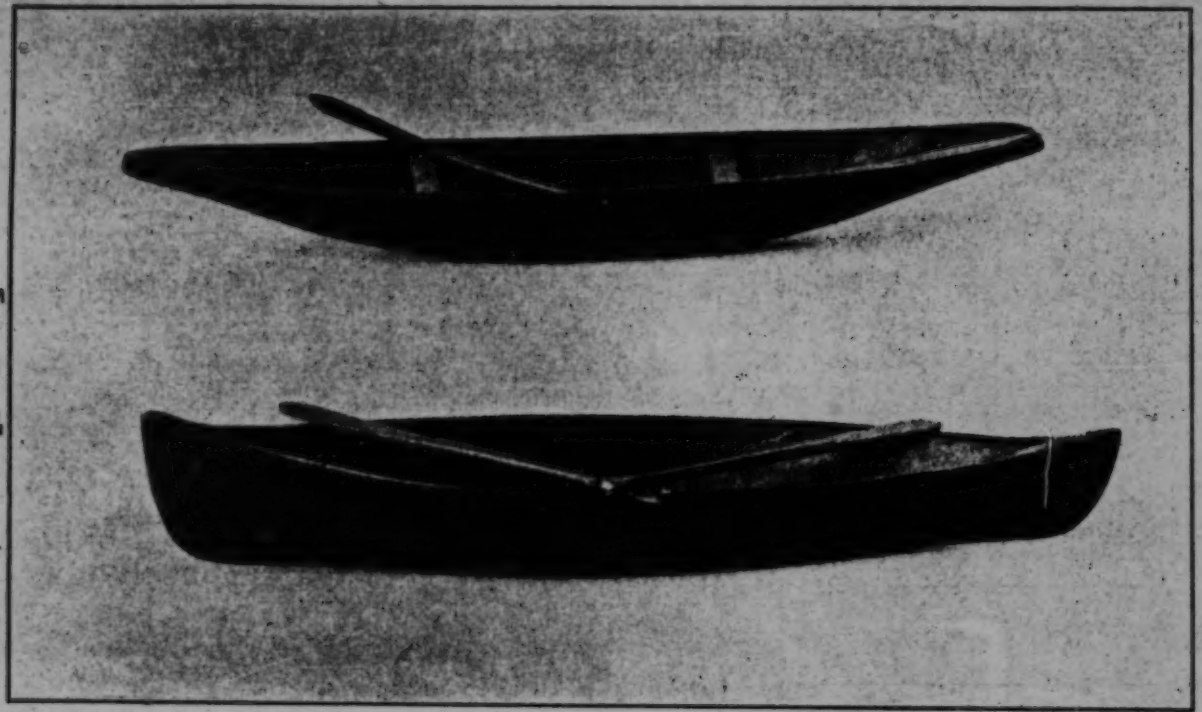

UPPER, MODEL OF "PITPAN," A FLAT-BOTTOMED CANOE FOR RIVER NAVIGATION; LOWER, MODEL OF "DORI," A KEELED CANOE FOR SEA AND LAGOON NAVIGATION

Sumu of lower Rio Escondido.

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1: Conzemius M-4, 5 (1921) 1932
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that in former days the Miskito made rude canoes of plaited withes and made them waterproof by smearing a thin layer of clay over them. The Ladinos have corrupted the name into "pipante." The Miskito of the upper Rio Coco, who know no other boat but the pitpan, apply the name *dori* or *duri* nowadays to a keeled or unkeeled canoe, but among their kindred living near the sea this word is restricted to the former type. In all Sumu dialects both types are called *kuriñ*.

Bateau.—A large form of pitpan, known by the French name "bateau," is generally used to transport cargo on the rivers of the Mosquito Coast. It is made by enlarging an ordinary pitpan. The latter is cut lengthwise in two halves of equal size; boards are then inserted, and the two parts are joined again. The sides are also raised. Such bateaux are generally manned by six paddlers and take about 5,000 pounds of freight. On some of the larger rivers there are operating some bateaux measuring up to 60 feet in length, 4 to 6 feet in width, and taking up to 100 Spanish quintals (say, 4,600 kg., or 10,145 English pounds) of merchandise. These are manned by from 10 to 12 Indians. A small cabin or "carroza" for the passengers is made immediately in front of the captain's seat, who steers the boat from the stern with the aid of a gigantic paddle. Such a cabin may be made of canvas cloth or merely of bamboo and large leaves; it affords protection from rain and sunshine.

Making of a dugout.—The manner of cutting trees and hollowing them out in former days was evidently that practiced in other parts of the New World before the arrival of the Spaniards. A ring was made with the stone ax through the bark and base of the tree, thus causing it to dry. Then fire was applied, and the wood was cut away as it charred. This process was repeated until finally the tree was felled. The hollowing out of the stem was also effected by alternately applying fire and the stone ax. Water was always kept at hand in order to quench the fire so as not to waste more wood than was necessary.

The width of a dugout is enlarged after it has been filled with water during a number of days; it may then easily be stretched and widened by inserting sticks. In former days rough dugout canoes used to be furnished by some of the Sumu tribes as a sort of tribute to the King of the Miskito.

Trees used in canoe making.—Following is a list of the various trees which are made into canoes by the Indians under consideration:

Mahogany (M. and S.: *yulu; Swietenia macrophylla* King) is the tree most commonly used, as it is very abundant on the Mosquito Coast; canoes from this wood are very durable, but rather heavy, and they are often attacked by boring worms.

Cedar (M.: *yalam, wiñkur;* S.: *suhun, wiñkur; Cedrela* sp.). Canoes hollowed out from this tree are very light and comparatively du-

1: Conzemius M-4, 5 (1921) 1932
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rable; the wood splits easily, but it has the advantage of not being subject to the attack of worms.

The guanacaste tree (M. and S.: *tuburus; Enterolobium cyclocarpum* Griseb.) is the one preferred by the Black Carib for the making of canoes; they allow the tree to "season" on the ground for a few months before starting to hollow it out. The wood is as light as cedar.

From the silk cotton tree (M.: *sisin;* S.: *panya, paniki; Ceiba pentandra* Gaertn.) very large dugouts may be made, but its light, whitish wood is not durable. Owing to certain superstitions regarding this tree, it is rarely used in boat making. (See Religion, etc.)

Saba (M.: *swa;* S.: *saba; Carapa guianensis* Aubl. or *Guarea caoba* C. DC.). The wood from this tree can scarcely be distinguished from mahogany in color and general appearance, but it is less durable.

Santa Maria (M. and S.: *krasa; Calophyllum brasiliense* var.) is seldom used, and it is suitable only for small canoes, as the tree does not attain such a great size as the aforementioned varieties. The wood is very durable, but it is rather heavy.

Emery (*Vochysia hondurensis* Sprague) is occasionally made into dugouts in the southern section of the Mosquito Coast. The wood resembles that of the silk cotton, but it is more lasting. It has, however, the disadvantage of soon becoming water-logged; besides, it rots immediately where a nail has been driven in.

The banak or cebo tree (M. and S.: *banak; Virola merendonis* ?) is a large tree which is also occasionally made into canoes.

CANOE POLES.—Canoes are propelled by long poles or by paddles. The poles (M.: *kahra, kahara;* T.: *kaha pan;* P.: *kaha pana, kuriñ pana;* U.: *pan sañ*) are used in shallow water with rapid current and hard bottom. In a small "cranky" pitpan this method of travel is not agreeable, especially to a newcomer; each time the boatmen, who stand up at the bow, push with their poles, the canoe begins to lurch as if it was going to upset. The captain sits at the stern and steers with a paddle.

PADDLES.—The paddles (M.: *kwahi;* T. and P.: *kawiñ;* U.: *wiñkna*) are broad bladed and made generally of mahogany or cedar. They measure from 4 to 5 feet in length and are often roughly polished. Larger paddles are also used, especially by the steersman, for the propelling of the bateaux. At its upper extremity the paddle terminates into an enlargement or "ear" (M.: *kyama;* S.: *tapani, tapaka*), which serves as grip to one hand, while the other hand grasps the paddle about 2 feet farther down. The paddles are moved vertically along the gunwale of the boat, the blade forcing back the water with main strength applied and very quick strokes.

SAILS.—In former days the Miskito are known to have employed sails (M.: *kwaltara;* T., P.: *asna nohni;* U.: *asna nohka*[38]) of native

[38] These names literally mean "large cloth."

1: Conzemius M-4, 5 (1921) 1932
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cotton, but this manner of facilitating navigation may have been of European introduction. To-day the Indians make sails from canvas or other imported cloth, and employ them on the sea, lagoons, and the larger rivers.

RAFTS.—In descending the rivers the Indians also make use of rafts (M.: *puhlak;* T., P.: *pala, dana;* U.: *lim*). They are made by tying a number of balsa stems or other light wood together with the aid of lianas or vegetable fibers. For lack of other light woods at hand, banana stems are sometimes used for this purpose, but these soon become water-logged. The stems are generally half submerged, but on large balsa rafts the natives descend from the interior with heavy cargoes of merchandise or livestock.

SKILL AND ENDURANCE OF THE INDIAN BOATMEN.—Both Miskito and Sumu are remarkable for their skill and endurance as boatmen. They work in a rhythm, and at each thrust all the paddles lightly strike the gunwale of the canoe together. From time to time, at a sign of the bowman, all the paddles are lashed simultaneously with the flat part of the blade upon the surface of the water.

The river Indians of the interior are very skillful in the management of the canoes through the falls and rapids of the streams. When proceeding upstream the boat is generally hauled through a side channel, or overland with the aid of strong withes or lianas [20] which are fastened to the hole in the bow. But a greater danger consists in "shooting" the rapids, the canoe rushing with great speed down the crooked channel oversown with projecting rocks. One Indian stands in the bow with a pole balanced in the middle, with which he touches the rocks scattered in the river, in order to guide the dashing pitpan and ward it off from these dangers. Every one is silent and watchful except for the short, sharp words of direction from the bowman to the captain, who is at the stern and assists with the timely stroke of the paddle. If the canoe gets swamped, the Indians jump overboard and, hanging on to it with one hand, they bail out the water with the aid of a calabash.

DOMESTICATION OF ANIMALS AND BIRDS

INDIGENOUS ANIMALS.—Many indigenous animals are tamed to keep as pets. Of these the most frequently seen are the capuchin or white-faced monkey (*Cebus* sp.), the spider monkey (*Ateles* sp.), the howling monkey (*Alouatta* sp., syn. *Mycetes* sp.), paca (*Cuniculus*

[20] Many trees are covered with such parasitic vines or lianas which climb up the stem to the branches, from which they hang freely down like ropes in sizes from very thin ones to others measuring up to 2 and even 3 inches in diameter. They are stronger than string or rope and resist the influence of the climate much better.

2: Kirchhoff E-4 (no date) 1948
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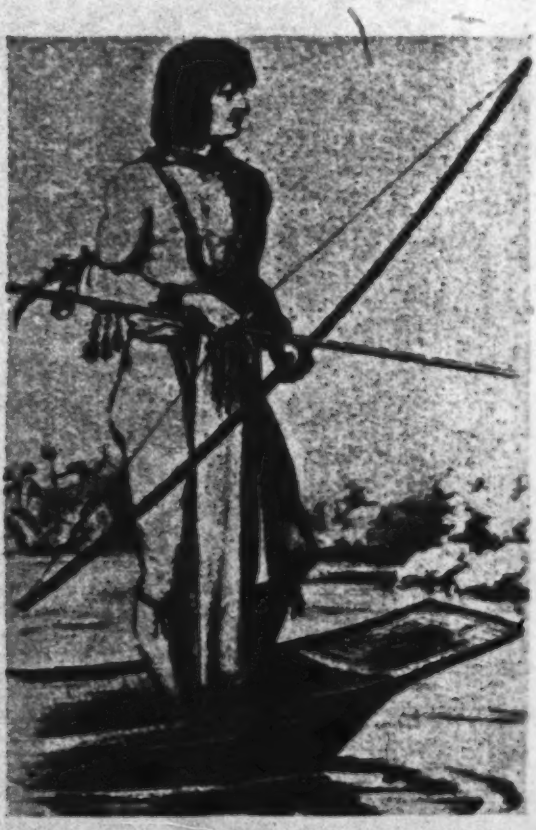

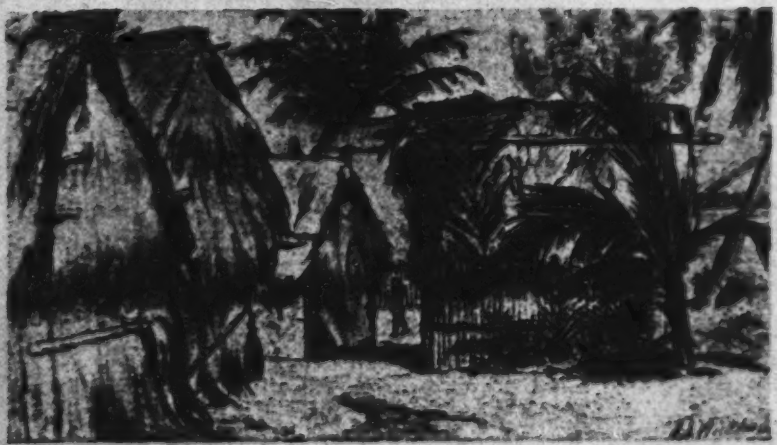

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PLATE 25.—Sumo and Mosquito Indians, Nicaragua. *Top:* Sumo man. *Bottom:* Mosquito village, Pearl Lagoon. (Courtesy American Museum of Natural History.)

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1: Conzemius M-4, 5 (1921) 1932
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cotton, but this manner of facilitating navigation may have been of European introduction. To-day the Indians make sails from canvas or other imported cloth, and employ them on the sea, lagoons, and the larger rivers.

RAFTS.—In descending the rivers the Indians also make use of rafts (M.: *puhlak;* T., P.: *pala, dana;* U.: *lim*). They are made by tying a number of balsa stems or other light wood together with the aid of lianas or vegetable fibers. For lack of other light woods at hand, banana stems are sometimes used for this purpose, but these soon become water-logged. The stems are generally half submerged, but on large balsa rafts the natives descend from the interior with heavy cargoes of merchandise or livestock.

SKILL AND ENDURANCE OF THE INDIAN BOATMEN.—Both Miskito and Sumu are remarkable for their skill and endurance as boatmen. They work in a rhythm, and at each thrust all the paddles lightly strike the gunwale of the canoe together. From time to time, at a sign of the bowman, all the paddles are lashed simultaneously with the flat part of the blade upon the surface of the water.

The river Indians of the interior are very skillful in the management of the canoes through the falls and rapids of the streams. When proceeding upstream the boat is generally hauled through a side channel, or overland with the aid of strong withes or lianas[39] which are fastened to the hole in the bow. But a greater danger consists in "shooting" the rapids, the canoe rushing with great speed down the crooked channel oversown with projecting rocks. One Indian stands in the bow with a pole balanced in the middle, with which he touches the rocks scattered in the river, in order to guide the dashing pitpan and ward it off from these dangers. Every one is silent and watchful except for the short, sharp words of direction from the bowman to the captain, who is at the stern and assists with the timely stroke of the paddle. If the canoe gets swamped, the Indians jump overboard and, hanging on to it with one hand, they bail out the water with the aid of a calabash.

DOMESTICATION OF ANIMALS AND BIRDS

INDIGENOUS ANIMALS.—Many indigenous animals are tamed to keep as pets. Of these the most frequently seen are the capuchin or white-faced monkey (*Cebus* sp.), the spider monkey (*Ateles* sp.), the howling monkey (*Alouatta* sp., syn. *Mycetes* sp.), paca (*Cuniculus*

[39] Many trees are covered with such parasitic vines or lianas which climb up the stem to the branches, from which they hang freely down like ropes in sizes from very thin ones to others measuring up to 2 and even 3 inches in diameter. They are stronger than string or rope and resist the influence of the climate much better.

1: Conzemius M-4, 5 (1921) 1932
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gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[38] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

FORMER ARTICLES OF BARTER.—The Miskito used to evaporate salt from the water of the sea and lagoons and collect pretty sea shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

During the latter part of the seventeenth century, and for many years following, the Miskito undertook daring sea voyages as far south as Chiriqui Lagoon in Panama, and occasionally even beyond that region. These expeditions were, however, not organized with peaceful trading in view, but for the purpose of stealing cacao from the Spanish settlers at Rio Matina (Costa Rica), and capturing Indians to be sold to the English traders of Jamaica.

PRESENT-DAY COMMODITIES.—Nowadays the Indian's wants from the outside world are many. The Miskito, who are less primitive than their neighbors, were already in commercial relations with

[38] According to G. N. Collins (see Safford in Smithsonian Report for 1916, p. 421) this use still persists in the Mexican State of Chiapas.

3: Pijoan D-5 (ca. 1945) 1946
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dual doing the measuring and much over-emphasis has been placed on this subject.[34] Thus the data are used only as an approximate impression and categorically support clinical observation and conclusions.

Average weights and height of Miskito men and women relative to their age

All years	*Sex*	*Height (cms)* 152	158	160	165	170	175
		Weight (kilo)					
18-20	M	55.1 (10)*	58 (8)	61 (13)	—	—	64.2 (6)
20-21	M	58.6 (8)	60 (14)	62 (21)	64.6 (6)	65 (6)	64.0 (4)
21-24	M	59.2 (5)	—	61.8 (4)	64.6 (9)	64 (6)	65.0 (4)
25-32	M	66.0 (9)	67 (13)	71.0 (19)	75 (19)	77 (13)	76.0 (2)
18-20	F	60.2 (13)	63 (14)	65.0 (17)	65 (3)	—	—
20-21	F	62.4 (21)	65 (20)	65 (19)	68 (7)	—	—
25-32	F	70.0 (20)	72 (19)	73 (13)	75 (8)	—	—

* Numbers in brackets indicate number of people examined of the same age.

The averages may be further computed for the age groups in question and at 19 years of age may allow for the following comparison:

Comparison of nineteen-year-old subjects (Height in cms)

	Present Survey	*Taken from Krogman*[24]			
Sex	*Miskito Indian*	*American Chicago*	*American Negro*	*German*	*Japanese*
M	162	176	172	174	158
F	160	164	160	165	146

It can be seen from these data the women grow to be about as tall as the men but from the previous table they also tend to become more obese or add more weight than the men. They appear to be generally of shorter stature than those of us who visited the area and this notion is supported by measurements. It must be noted, however, that these people (Waspam, Saulpuca) were upper river folk and cannot be correctly compared with the data obtained by Schultz[20] who studied twelve Sumu Indians from Río Prinsapolca and twenty five Rama Indians from Rama Key. There appears to be, furthermore, slight differences in weight and height within the tribe. These variations are more pronounced in coastal towns, where the socio-economic level is poor by comparison

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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puhlak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *krikri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets and as bed sheets (M.: *nina-pala, munta-pala;* T., P.: *dañ-rina;* U.: *dañ-paknak*); in Honduras the Miskito also use mats (*tnasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilar*, corrupted from the English; S.: *tunana*) are stuffed with cotton or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses. The mosquito nets, called *pabulo* by both tribes, are made of opaque cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

513 [824] [439]

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wah*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

854 CRADLES.—In former days cradles (M.: *kuhsañ;* T., P.: *pala;* U.: *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

352 STOOLS.—Low wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*) with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

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[p. 50 a]

HAMMOCK MADE FROM THE BAST FIBER OF THE SANI TREE
Miskito of Rio Plátano.

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1: Conzemius M-4, 5 (1921) 1932
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526 staff play. The object of the game is to see which can keep up longest the continual strain upon the muscles of the arm, and ultimately strike the staff from the hand of the other."

HYGIENE: DISEASES AND THEIR CURE

515 Most of the Indians keep themselves very clean and take a bath twice a day in the river adjoining their settlement. As they wear but little clothes this is a very simple operation with them; they keep their body cleaner than do the lower class of the Ladinos, or of the white race in Europe, where the clothes are frequently the main source of dirtiness.

514 When the Indian goes to stool he always takes to the water, drifting down the river until he comes to a secluded spot, where he can perform this operation in privacy. When finished he cleanses the body with water.

515 The presence of dogs and pigs in the huts is responsible for the great quantity of fleas to be found there. In spite of the great care devoted to the hair, the latter is frequently full of vermin, and it is not an uncommon occurrence to see at the villages rows of women picking off one another's lice and crushing the troublesome insects between the teeth—a most disgusting sight.

164 MALARIA.—A swelling of the spleen and anemia are common enough and are undoubtedly the result of malaria (M.: *wrih*; T.: *wars*, *warai*; P., U.: *yama*, *yamah*),[a] which is endemic in the lowlands, although rarely fatal. The transmitting agent of malaria is a mosquito of the genus *Anopheles*, which is very common.

751 For malarial fevers infusions from the bark of certain trees are administered, especially that of the copalchí (*Cinchona* sp.). Instead of sudorific bush medicine, quinine is also administered nowadays. The fever or lemon grass (*Andropogon nardus* L.) is also used for this purpose. The sudorific is followed by a steam bath. The stricken person is enveloped in tunu blankets, and water is thrown on some large heated stones placed at his feet; he then inhales the thick vapor or fumes produced thereby. This part of the treatment is excellent, for it induces perspiration; but as the patient is then taken to the riverside and forced to take a cold bath pneumonia is often the result.

Among the Sumu the patient is carried to one of the numerous hot springs (*daka*) which abound in their territory, and immersed therein, or he is buried up to the armpit in the hot sand at the edge of the pool.

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[a] These names were formerly used by both Miskito and Sumu as a general term for most other maladies, but nowadays the Miskito have adapted the word *sikaia* (Engl. "sickness") in the latter sense.

3: Pijoan D-5 (ca. 1945) 1946
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pre-columbian origin. The disease was found to occur in 10 per cent of the population examined, some villages having more of the disease than others. Aside from discoloration of the skin no other symptoms could be found and it appeared to have little effect on the body economy of an individual. However, many persons were conscious of the discoloration, felt shy because of it and presumed themselves to be unclean. The disease was common in certain families and not in others though there seems to be no evidence for congenital transmission[99]. So far little or no treatment for the disease has taken place in this area.

Dysentery

If by dysentery we mean infectious diarrhea then this disease is not only prevalent in the tropics but it is associated by high morbidity and mortality. And since it is epidemic in quality it is bacterial in origin.* However it must not be forgotten that dysentery is a loose term denoting mainly a symptom complex. As such the disease can be caused by amoeba, by the ciliate *Balantidium coli*, by malaria (P. falciparum), by certain worms, and by *giardia*. The two most common types of dysentery are bacillary and amoebic and of these two the former is our primary concern.

Bacillary dysentery is common throughout the year in the Coco River basin but has its greatest epidemic quality during the beginning and end of the rainy seasons. The childhood mortality rate from the disease although not exact takes a toll of approximately ten per cent of the children afflicted by it. As far as could de determined with limited equipment the common etiological agent is *Shigella paradysenteriae Flexner*, an organism utilizing glucose, mannite, but not lactose or dulcite.

The disease occurs chiefly in the larger villages; in the smaller villages it may be rare or have never occured. This is of interest from an epidemiological point of view since in some of the isolated small villages the carrier or the source of the organism is not available. In the larger villages, an example of which is San Carlos, the disease may debilitate a third to one half the population. In our opinion, at San Carlos the disease may be traced to certain wretched latrines within the business section of the village. Some of the latrines have been erected at considerable cost; others are make-shift devices for the conveniences of their owners. Regardless of cost the screens because

[99] Mackie, T. T., Hunter, G. W. and Worth, C. B. A. Manual of tropical medicine. Philadelphia, 1945.

* Dysentery bacilli, Salmonella, Staphylococci, etc.

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of rain and humidity have eroded, the pit fills with water and the entire construction fills with flies. The dysentery epidemics at San Carlos usually begin about these latrines and extend to the periphery of the village.

Another contributing factor to the spread of dysentery is that in some areas well meaning visitors have encouraged the use of milk for children. In a territory devoid of refrigeration or adequate sterilization the use of milk should be derived from the mother's breast or directly from the cow's udder. On the other hand milk products such as cheese are less likely to be infected. Nevertheless, milk fluid serves as an excellent bacterial medium. Powdered milk might obviate such a hazard.

Drinking water in the larger villages may be considered a source of infection since water may be stored in containers not ideally suited for such a purpose or the water may be collected from the main river or other pools simply because the source is conveniently located.

The Indian customs are such as to depress the occurrence of dysentery. These customs are to drink water from clear running creeks (see map of San Carlos), and to perform their ablutions either in the large river or to dig holes for their excremata. If holes are dug in the bush they are immediately covered up after use. The Indian, unless educated otherwise, considers the communal use of a structure such as a collecting booth for feces and urine as an evil. It would thus appear that the invading culture (Spanish American) with its convenient latrine often in juxtaposition to the latrine, has furthered the dysentery problem.

Some of the latrines observed were of such a character that even the investigators used to the inconveniences of the bush felt repelled by the utterly uninviting stench and the great scatter of soiled paper throughout the establishment. Toilet paper, in many tropical areas of high humidity, offers itself as a remarkable medium for growth of molds which renders the paper useless. Latrines built by special sanitary engineers were misused, had eroded screens and were halt filled with water. During the dry season when they were erected they were presumed to be ideal and satisfactory in every way.

If the wretched latrine is to be used, the use insecticides and disinfectants must be encouraged, otherwise dysentery will be present. The authors of this report endeavored to encourage the Indian practice of waste disposal.

Amoebic dysentery exists as far as could be determined in from 2-5 per cent of the population. Stool examinations at Waspam, revealed that 7 per cent of the adults and 2 per cent of the children had

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supposed to attract the same species and entice it within gunshot.[*] 224
The bones, teeth, and skulls of animals killed in the chase are said to 777
have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of [523]
which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were 701
very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaliqui*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal 702
weapon of both tribes under consideration. (See Hunting and 868
Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time 702
great festivals, called *asak ldiwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as [562]
they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

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[*] There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

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539 Occasionally the old men tell about mysterious tribes which formerly inhabited the country. The following account of the Wiswis Indians was told to me in 1918 by the Miskito Ramón of Burimak (upper Rio Coco):

THE WISWIS LEGEND.—On the left bank of Rio Coco, near the present settlement of Saulala, there used to live a subtribe of either Miskito or Sumu.[a] Having once killed a great number of *wiswis* birds, they become known by the latter name. They refused to pay tribute to the king, and for that reason the latter treated them cruelly, and had them whipped frequently.

One day, while they were out hunting, they killed a number of wild hogs (*wari*), and cut some withes of a variety called *dar*, in order to tie the legs of the animals together and secure the latter on their backs. As soon as they had fastened the withes they could not see the peccaries any longer, although they were able to smell and to feel them. One of them then untied the withes and immediately the animals became visible again. This Indian then tied one of the withes round his own neck, whereupon his companions could not see him any longer. They now realized that the *dar* withe has the property of rendering invisible anything tied with it.

The Wiswis were glad of having made this discovery, and they decided to put it to practical use. When they heard of the king's envoys coming in order to collect the taxes they tied some of these withes round their houses, and the tax collectors were unable to find them or even locate their villages.

In spite of this sorcery the Wiswis were unable to escape the wrath of the king. In order to get away from their oppressive ruler they emigrated toward the interior, wandering overland through the vast savanna, which extends on the left bank of Rio Coco uninterruptedly to Rio Kahka (above Auasbila). From this latter place they are said to have reached Bocay eventually, but no one knows how; some claim, however, that they crossed over to Honduras.

Two rows of little cairns, which stretch in a straight line from Saulala to Rio Kahka, are attributed to the Wiswis. The latter are supposed to have placed them on both sides of their road during their long march inland. These tumuli are from 10 to 16 miles away from Rio Coco; from the village Auasbila it takes about half a day's march to get to them. They are still known among the Miskito by the name *Wiswis kaiwan* "placed by the Wiswis."

524 GAMES AND SPORTS.—The little boys play war and hunting games with toy bows and arrows; the latter are tipped with a wooden knob or with beeswax. Kites (M.: *istapla*), spinning tops (M.: *purmaya*,

[a] Lehmann refers to the *Visises* as a cannibal tribe of unknown origin, which settled at the Mosquito Coast about the twelfth century. These people finally departed, but no one knows whither (Lehmann, b: 716; c: I, 463).

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purwaya), stilts (M., S.: *umas*) and marbles may occasionally be seen; the spinning tops may be of foreign manufacture, or they are made by the Indians from large seeds through which a stick has been passed. String puzzles or cat's cradle, a common game of our schoolboys, has been observed by the writer among both Miskito and Sumu, but unfortunately he neglected to record any of them. Already Wickham (b: 160; c: 207) records "scratch cradle" among the Sumu of Rio Siquia and notices very rightly that these Indians carry it into far more complicated passages than we do. 524

Hide and seek is known, and the "tiger game" is especially popular. In the latter, one of the boys is supposed to represent the tiger, that is the jaguar or the puma, and he hops around on all fours, imitating the gait and voice of that feline. The other children stand in a file, each one placing the hands upon the shoulders of the one in front of him. The biggest boy is leading while the smallest one is at the rear end. The "tiger" attempts to catch one among the row, but the boy in front outwits him by dashing immediately to the threatened spot. All the time the group keeps on calling "tiger is coming" (M.: *limi dûla;* T., P.: *nawa kdiwa;* U.: *nawa waya*).

Another game, called *uli pulaya* "playing turtle" is described by Bell (b: 151) as follows: "One boy is chosen as the turtle, and swims away to a fixed distance from the rest; then at a signal, he dives, and the other boys try to catch him. As the water of the (Bluefields) lagoon was usually a little muddy from the dashing of the small waves on the half-mud, half-sand of the beaches, it was not easy to see the diving boy in, say, 5 feet of water; besides which they were skillful divers, and could keep long under water. The boy dives to the bottom, and keeps to it. Drawing up his right leg, he buries his toe in the sand, and kicks out violently, sending his body flying along the bottom, to rise finally to the surface in some most unexpected position. The 'turtle' waits to rest till his pursuers are too near, then dives again, and possibly shoots between them, rising to blow far behind them. Finally the 'turtle' is caught and brought to the captain or quartermaster (*kwatmas*) of the boys, who is supposed to kill it by slapping with the palm on the top of the head."

In another game, called *ilili pulaya* "playing at shark," the diving boy, representing that fearful fish, stealthily dives among the others, and pinches or bites them under water. This is a favorite game, which fun and fear combine to make very exciting (Bell, b: 152).

Wickham (b: 160; c: 200–201) states that the Ulwa of Rio Escondido "have a singular mode of playing with staves or short poles, which they grasp in the middle, and then, standing opposite each other, holding them at arm's length, strike each end alternately together with all their force. The opponents are matched in pairs, and in appearance it rather reminds one of the old English quarter- 526

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The men taking part at the *asaŭ ldiwana* had the whole body painted black and wore nothing but the loin cloth. They had to be ceremonially "pure" (*sunu*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *pupuł* (maize liquor), for every one was afraid of him.

At the *asaŭ ldiwana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŭ al yaŭ*, "I am a man," whereupon his adversary replies *yaŭ bik al yaŭ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

1: Conzemius M-4, 5 (1921) 1932
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purwaya), stilts (M., S.: *umas*) and marbles may occasionally be seen; the spinning tops may be of foreign manufacture, or they are made by the Indians from large seeds through which a stick has been passed. String puzzles or cat's cradle, a common game of our schoolboys, has been observed by the writer among both Miskito and Sumu, but unfortunately he neglected to record any of them. Already Wickham (b: 160; c: 207) records "scratch cradle" among the Sumu of Rio Siquia and notices very rightly that these Indians carry it into far more complicated passages than we do.

Hide and seek is known, and the "tiger game" is especially popular. In the latter, one of the boys is supposed to represent the tiger, that is the jaguar or the puma, and he hops around on all fours, imitating the gait and voice of that feline. The other children stand in a file, each one placing the hands upon the shoulders of the one in front of him. The biggest boy is leading while the smallest one is at the rear end. The "tiger" attempts to catch one among the row, but the boy in front outwits him by dashing immediately to the threatened spot. All the time the group keeps on calling "tiger is coming" (M.: *limi dula*; T., P.: *nawa kelwa*; U.: *nawa waya*).

Another game, called *uli pulaya* "playing turtle" is described by Bell (b: 151) as follows: "One boy is chosen as the turtle, and swims away to a fixed distance from the rest; then at a signal, he dives, and the other boys try to catch him. As the water of the (Bluefields) lagoon was usually a little muddy from the dashing of the small waves on the half-mud, half-sand of the beaches, it was not easy to see the diving boy in, say, 5 feet of water; besides which they were skillful divers, and could keep long under water. The boy dives to the bottom, and keeps to it. Drawing up his right leg, he buries his toe in the sand, and kicks out violently, sending his body flying along the bottom, to rise finally to the surface in some most unexpected position. The 'turtle' waits to rest till his pursuers are too near, then dives again, and possibly shoots between them, rising to blow far behind them. Finally the 'turtle' is caught and brought to the captain or quartermaster (*kwatmas*) of the boys, who is supposed to kill it by slapping with the palm on the top of the head."

In another game, called *ilili pulaya* "playing at shark," the diving boy, representing that fearful fish, stealthily dives among the others, and pinches or bites them under water. This is a favorite game, which fun and fear combine to make very exciting (Bell, b: 152).

Wickham (b: 160; c: 200–201) states that the Ulwa of Rio Escondido "have a singular mode of playing with staves or short poles, which they grasp in the middle, and then, standing opposite each other, holding them at arm's length, strike each end alternately together with all their force. The opponents are matched in pairs, and in appearance it rather reminds one of the old English quarter-

1: Conzemius M-4, 5 (1921) 1932
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526 staff play. The object of the game is to see which can keep up longest the continual strain upon the muscles of the arm, and ultimately strike the staff from the hand of the other."

HYGIENE: DISEASES AND THEIR CURE

515 Most of the Indians keep themselves very clean and take a bath twice a day in the river adjoining their settlement. As they wear but little clothes this is a very simple operation with them; they keep their body cleaner than do the lower class of the Ladinos, or of the white race in Europe, where the clothes are frequently the main source of dirtiness.

514 When the Indian goes to stool he always takes to the water, drifting down the river until he comes to a secluded spot, where he can perform this operation in privacy. When finished he cleanses the body with water.

515 The presence of dogs and pigs in the huts is responsible for the great quantity of fleas to be found there. In spite of the great care devoted to the hair, the latter is frequently full of vermin, and it is not an uncommon occurrence to see at the villages rows of women picking off one another's lice and crushing the troublesome insects between the teeth—a most disgusting sight.

164 MALARIA.—A swelling of the spleen and anemia are common enough and are undoubtedly the result of malaria (M.: *wrih;* T.: *ware, warai;* P., U.: *yama, yamah*),[44] which is endemic in the lowlands, although rarely fatal. The transmitting agent of malaria is a mosquito of the genus *Anopheles*, which is very common.

757 For malarial fevers infusions from the bark of certain trees are administered, especially that of the copalchí (*Cinchona* sp.). Instead of sudorific bush medicine, quinine is also administered nowadays. The fever or lemon grass (*Andropogon nardus* L.) is also used for this purpose. The sudorific is followed by a steam bath. The stricken person is enveloped in tunu blankets, and water is thrown on some large heated stones placed at his feet; he then inhales the thick vapor or fumes produced thereby. This part of the treatment is excellent, for it induces perspiration; but as the patient is then taken to the riverside and forced to take a cold bath pneumonia is often the result.

Among the Sumu the patient is carried to one of the numerous hot springs (*daka*) which abound in their territory, and immersed therein, or he is buried up to the armpit in the hot sand at the edge of the pool.

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[44] These names were formerly used by both Miskito and Sumu as a general term for most other maladies, but nowadays the Miskito have adapted the word *siksis* (Engl. "sickness") in the latter sense.

1: Conzemius M-4, 5 (1921) 1932
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CLOTHING

291 MEN.—The loin cloth, breechcloth, or waistcloth (M.: *palpura;*[37] T., P.: *wah;* U.: *ani*) was formerly the only article of dress worn by men on ordinary occasions. It consists of a long, narrow strip of bark cloth, 8 to 9 feet long and 12 to 15 inches wide, which is wrapped several times around the loins, while the ends are left to hang down in front and behind. Occasionally it was made from cotton, and ornamented with colored patterns. The loin cloth has now practically disappeared among the Miskito, being worn only by boys, but it is still in use among the grown-up Sumu. Now all the men from [177] both tribes own loose cotton shirts (M.: *prak;* S.: *parak;* from the English "frock") and trousers (M.: *trâusis,* from the English; T., P.: *kal-anin;* U.: *kalson,* from the Spanish "calzón") with the tails generally not tucked in. They make these articles themselves [434] from imported cloth or they obtain the finished garment by way of trade. Formerly the Sumu used a sort of shirt or poncho, consisting [287] merely of a sheet of tree bark with a hole in the middle for the head; it was tied under each arm with a piece of fiber. This primitive garment was called *kahlâu* or *kahlo* by the Sumu; its Miskito name is unknown. When the Indian is in the open at the approach of rain he pulls his shirt off and covers it up with large *Heliconia* or *Musa* leaves in order to prevent it from getting wet.

WOMEN.—The only garment worn by the more primitive women of both tribes is a wrapper (M.: *kwaluntara;* T.: *ipnapan;* P.: *ipnapani, asna-pani, amat-pani;* U.: *asna-pahka*), a piece of cloth, 2½ to 3 yards in length, which is wrapped about the hips and extends from the waist, where it is fastened by tucking in one end, down to the knees. Now- [439] adays it is made of imported bright-colored cloth, but formerly the [287] common tunu bark cloth was used for this purpose. The upper part of the body was entirely naked in former days, but now the women wear a sleeveless garment of imported cotton goods, which is cut very open and is known by the English name *prak* (= "frock") among the Miskito; the Sumu call it *kahlâu* (T., P.) or *kahlo* (U.). Little girls wear a sort of loin cloth, as do the boys, but with broad end pieces which look like small aprons in front and behind; this garment is called *nika* by the Miskito and *tatai* by the Sumu.

292 DRESS OF THE CHIEFS.—Men of rank wore, besides the loin cloth, a sleeveless cotton tunic (M.: *wipal;*[38] S.: *kiñkura*) which hung down to the knees; it was beautifully embroidered with the down of the [531] muscovy duck and dyed by means of vegetable juices. A girdle, sash or belt (M.: *yalasawa;* S.: *bamak-sitna*) of the same material was tied around the waist over this sort of mantle; it was about 6 feet long and 6 inches wide.

[37] This name is mentioned in 1699 under the form *purproy* (M. W.: 307, 308).
[38] Compare the word "huipil" in Mexican-Spanish.

1: Conzemius M-4, 5 (1921) 1932
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short distance from a small creek. A picture of one of these sites is given by Spinden (536). Occasionally these antiquales are surrounded by low walls, perhaps remains of former fortifications; others again were apparently defended by ditches and perhaps by palisades also. 324 172

ANCIENT METATES.—The metates found in these deposits are supported by three long, well-centered legs, which are generally covered with geometric designs; in front there is a bird or animal head (eagle, turtle, alligator, or jaguar). The Indians occasionally dig them up to be used in their households. Some fine specimens have been broken by man or by falling trees. Giant metates, which may reach over 6 feet in length, are still found, but the sculptured head has generally been removed from them. They remind us of the wooden stools still found in the Indian dwellings and it is very likely that they were used as ceremonial seats. In the Museum of the American Indian, Heye Foundation, there is a metate from the Mosquito Coast (Hodge: 56). Several large specimens from an important site discovered near Cucra Hill (to the south of Pearl Lagoon) about 30 years ago upon clearing the land for making banana plantations are in the American Museum of Natural History. The Peabody Museum of Harvard University also owns a few metates from the vicinity of Bluefields. [531]

ANCIENT BOWLS.—Cylindrical bowls with three short legs and made from a very hard granitelike rock are also found in the above-mentioned old sites, but they are less common than the metates. Two knobs near the rim, carved into bird or animal heads, serve as handles. These bowls or vases are ornamented with geometric motives, of which the most common is the incised guilloche, or rope pattern, of either curvilinear or angular construction.

The first description, accompanied with illustrations, of these "granite vases" from the Mosquito Coast is given by Pownall (318–324, pl. XXVI), who figures three of these objects. Two of these belonged to Lord Hillsborough. One of these latter (No. 1) is very small and has an animal head on one side. The larger one (No. 2) is more interesting; it is about 12 to 15 inches in diameter and 10 inches in height, with plain legs. There are two rows of diamond-shaped ornaments on the body of the vessel; the two handles take the form of a head and a tail, but the head is partly broken off. The third vessel (No. 3) is about 10 to 12 inches in diameter and height, but at the top it is somewhat narrower; it has carved legs and two head ornaments and is perhaps the best specimen in good condition found in the country. The bowls No. 2 and No. 3 have been reproduced by Humboldt (I, p. 238, and II, pl. 30) and by Dupaix (I, div. II, 27–28, and II, suppl. pl. VII, No. 1). The illustration of No. 3 has been copied also by Bancroft (IV, 36).

1: Conzemius M-4, 5 (1921) 1932
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the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many parts of the Mosquito Coast, chiefly in old burial grounds, indicate a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, probably the Sumu territory, the discovery of human heads, busts or entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dôh;* U.: *asi*), girdles or

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panba*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusaro*) and the cradles (M.: *kuhsañ;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kami;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *ribeya* salamander. The Indians utilize small glass beads (M.: *lilyara;* T., P.: *ala;* U.: *tasaika*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Fellechner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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531 [439] them. White thread and small needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from Spanish "aguja") of foreign manufacture are employed to string the beads.

NAVIGATION AND CANOE MAKING

484 Travel is effected chiefly by canoe, for there are hardly any roads in the country outside of the hunting trails; the numerous navigable rivers intersecting the country form, together with the lagoons and the sea, the means of communication.

The Miskito inhabiting the immediate seashore from Cabo Gracias a Dios on southward are excellent seamen; they were already noted for their courage on the sea by the buccaneers (Raveneau de Lussan: 440). The Miskito living to the north of that settlement, however, navigate the lagoons and rivers, and rarely venture on the sea. The Indians living inland, on the other hand, are afraid of the sea and of the large lagoons, but they are perfectly at home in the bush, and they are very expert in navigating the river boats through the dangerous falls and rapids.

491 BRIDGES.—The liana bridges, which are met with in other parts of Central America, are unknown on the Mosquito Coast. The Miskito and Sumu occasionally make a crude bridge over a narrow creek by felling a tree across it. Canoes are used everywhere for the crossing of the streams.

501 TYPES OF CANOES.—Two sorts of dugout canoes are used on the Mosquito Coast. The "dori," or keeled canoe, is used to navigate the sea and lagoons, while the "pitpan," or flat-bottomed canoe, is employed on the rivers. The sea canoes are fast sailors, but somewhat "cranky." All these boats are hollowed out by means of the adze; the largest specimens, cut out of the solid tree, without any addition, may reach up to 5 feet beam and 40 feet in length.

PITPAN.—The "pitpan" is a long narrow boat with flat bottom, drawing but little water; it is therefore particularly fitted to navigate the shallow creeks of the interior which abound in rapids and falls. It glides noiselessly over the water and is easily steered, but it is very cranky and the slightest motion renders it liable to upset. It is therefore of no use on the sea. The pitpan has a square projecting bow and stern, like a small platform, large enough for a person to stand on. A hole is made in the bow through which a pole is thrust perpendicularly in the ground, to moor at river banks or at shoals. The pitpan is very thick bottomed, and for that reason may sustain very rough handling in hauling it over the rocks at rapids and falls.

The name "pitpan," which is in general use among the English-speaking population of eastern Central America, is taken from the Miskito word *pitban*, which means plaited. It is claimed by some

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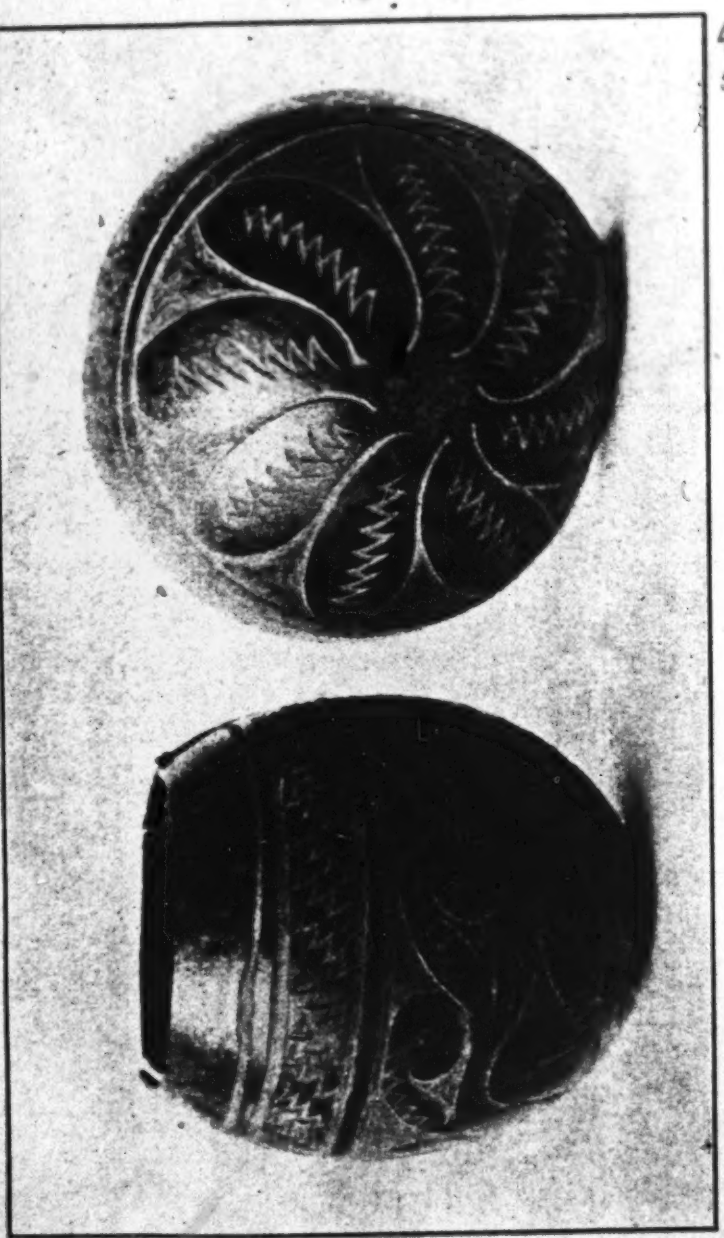

DECORATED CALABASH VESSELS
Bottoms of upper Rio Grande.

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[p. 54 A]

1: Conzemius M-4, 5 (1921) 1932
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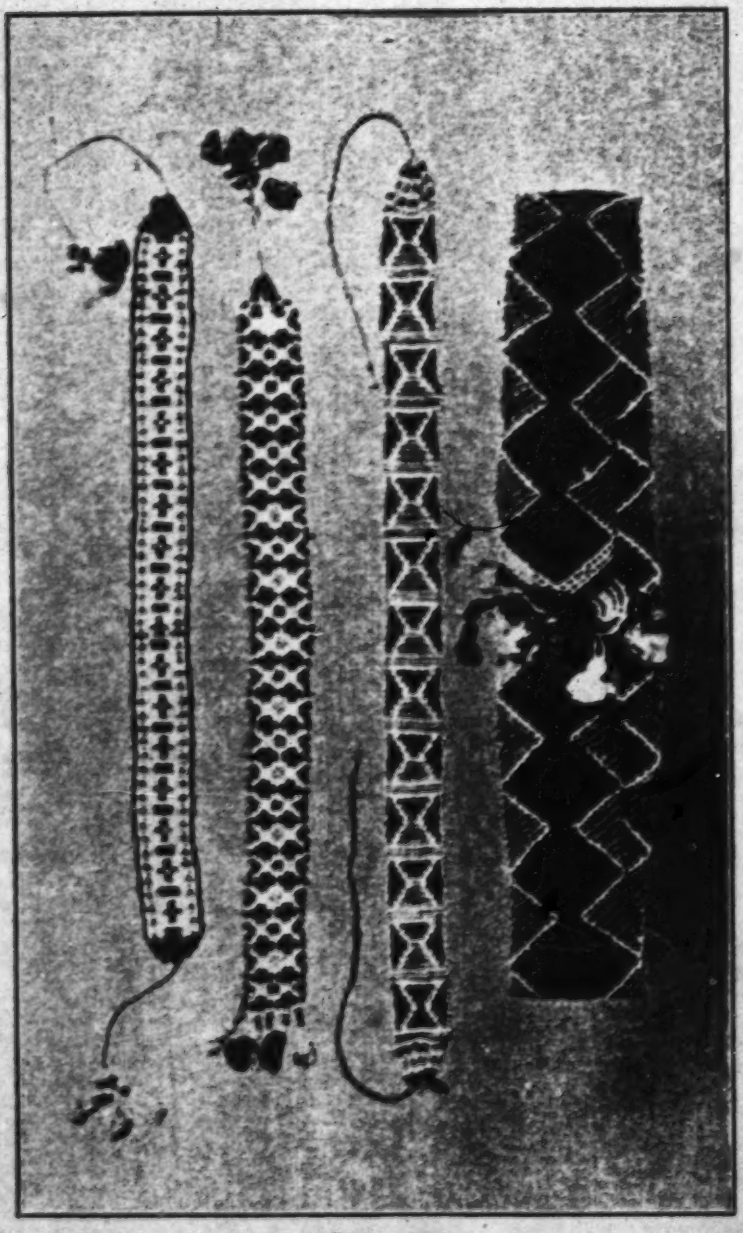

BEADWORK
Miskito and Sumu of Rio Coco.

[p. 54 B]

1: Conzemius M-4,5 (1921) 1932
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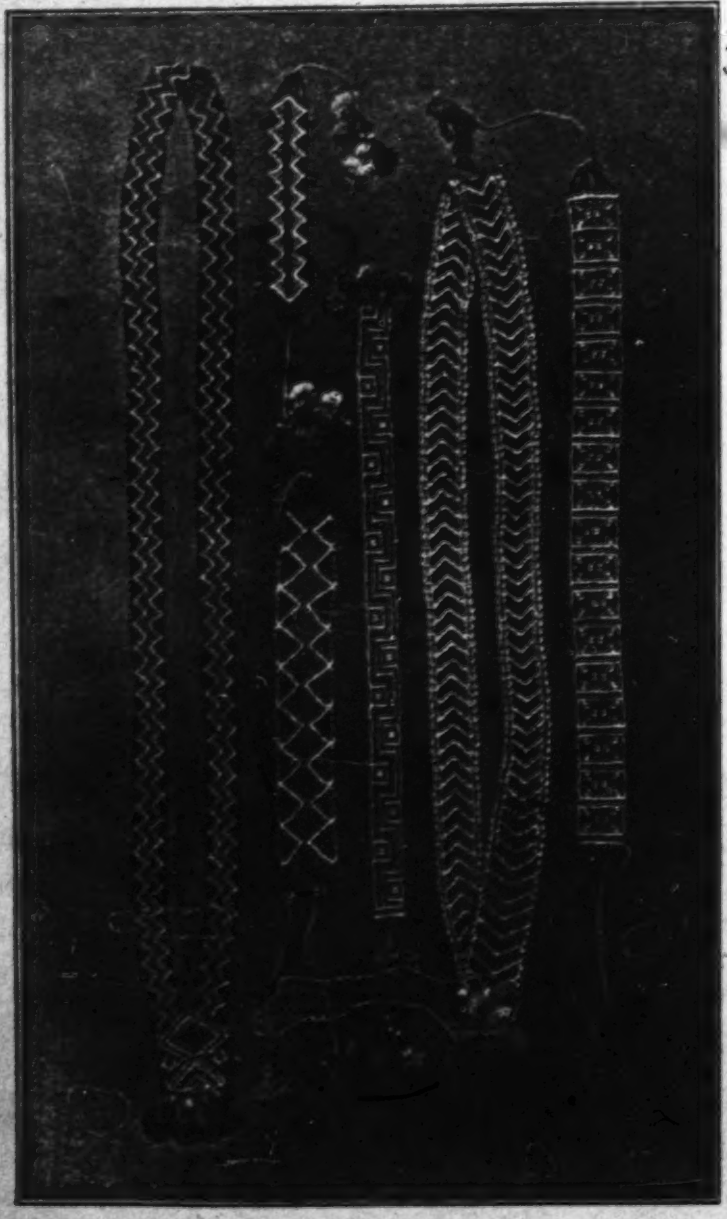

BEADWORK
Miskito and Sumu of Rio Coco.

[p. 54 c]

1: Conzemius M-4, 5 (1921) 1932
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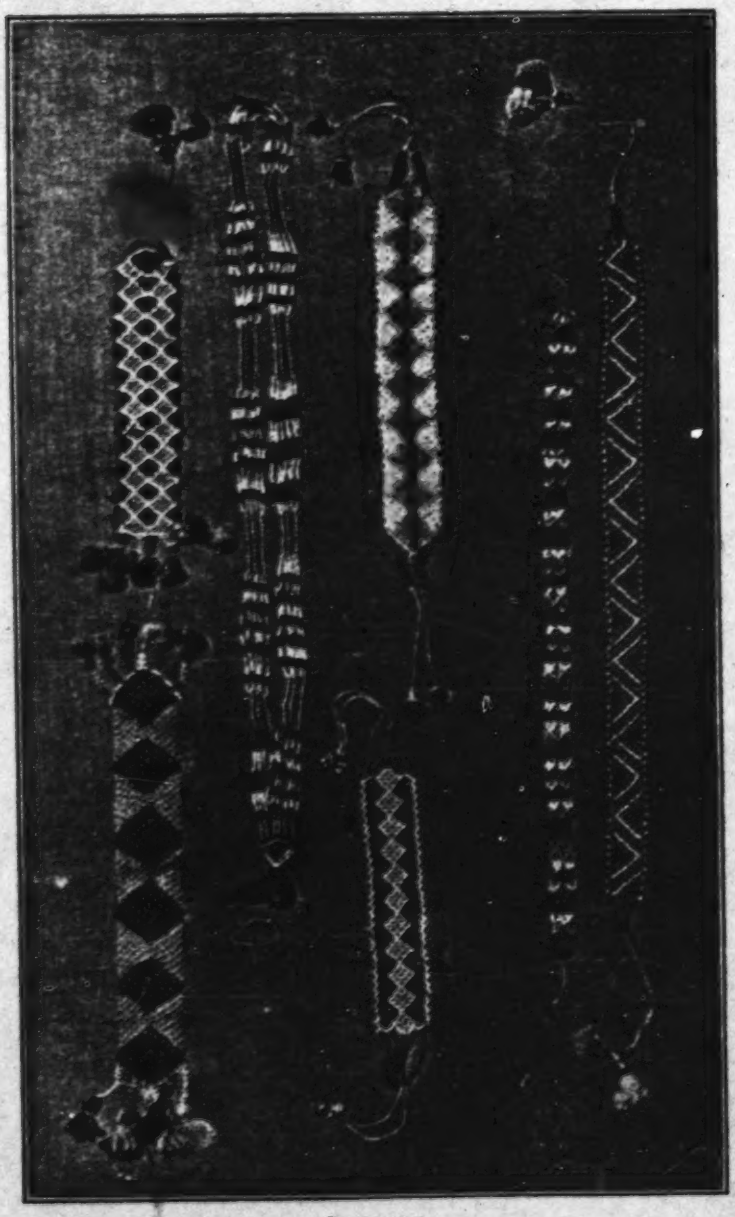

BEADWORK
Miskito and Sumu of Rio Coco

[p. 54 D]

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [867]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

2: Kirchhoff E-4 (no date) 1948
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415 Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

412 Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

411 **Weapons.**—*Mosquito*, *Sumo*, and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque*, an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella*. Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib*, and both types are used by the *Cuna* and *Choco*.

POLITICAL ORGANIZATION

422 Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

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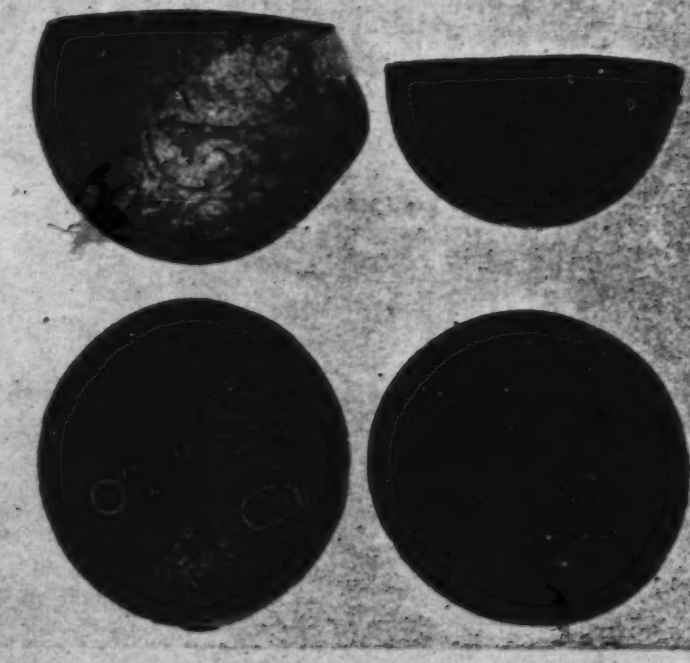

PLATE 36.—Sumo manufactures. *Top:* Beadwork. *Bottom:* Decorated gourd bowls. (Courtesy American Museum of Natural History.)

[p. 228 - B]

1: Conzemius M-4, 5 (1921) 1932
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Pownall (319) refers to another of these bowls in the British Museum, which belonged to a collection brought from Jamaica by Sir Hans Sloane. This is perhaps the one depicted by Joyce (p. 74, pl. VI, fig. 1) which resembles No. 3 described above.

In 1921 the writer found a number of these vessels, but all badly broken up, on the right bank of Rio Paulaya. Some of them were not detached from the quarry out of which they were formed. It is, however, not known from what site the marble was quarried. Bowls of similar material and technique have also been met with in the Bay Islands and in the valley of Rio Ulua. A large specimen is in the Museum of the American Indian, Heye Foundation (Hodge: 56).

STATUES OR CARVED PILLARS.—At certain old sites may be found some high slabs of stone which were originally placed upright, reminding one of our tombstones. Nearly all of them have now tumbled down. Occasionally some greatly obliterated geometric designs, or spirals, may be found on them.[28]

Spinden (539) pictures a stela or stone pillar on Rio Tocomacho (Honduras) which is 8 feet in height and nearly a foot square. It is covered on all sides with pictographic designs, chiefly spirals and scrolls; on one of the four faces there is a grotesque figure with a reptilelike creature on its head. Such stone pillars may also be found in other parts of the Mosquito Coast, but they are not common. Large stone statues, attaining as great a height as 12 feet, are, however, the outstanding feature of the archeology of the Pacific half of Nicaragua, especially of the great lake region.

Le Baron (217–222) describes and depicts some stone ruins from the left bank of Rio Prinsapolca, about 134 miles above its mouth. They consist of three monoliths, about 8 feet high, forming a triangle; the ground between them was paved with stones. These monoliths had fallen to the ground and were broken; on some of the faces there were rude carvings, greatly obliterated.

CARVED ROCKS

Pictographs may be found on the rocks in the bed of nearly all the larger streams, generally at the rapids and falls. They must have been made many centuries ago, for they are considerably waterworn, and often may be followed easier with the finger than with the naked eye. Many of these carved rocks are visible during the dry season only and are completely under water during the rainy months, owing to the rise of the rivers. (Fig. 1.)

WHERE THEY ARE FOUND.—Such carved rocks have been observed by the present writer at different places on the Rio Coco (at Wirapani,

[28] The modern Indians have no traditions concerning these ruins found in their territory, and ascribe them to the evil spirits.

1: Conzemius M-4, 5 (1921) 1932
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323 the neighborhood of the hut, where it is left to burn slowly, until all the wood and coals have been consumed. Neither paint, glaze, nor plastic ornamentation is applied nowadays.

ANCIENT POTTERY VESSELS.—The pottery objects found in many 323 parts of the Mosquito Coast, chiefly in old burial grounds, indicate 172 a much greater skill in this art than that possessed by the present-day inhabitants of the country. Most of such ware is unpainted, 531 but fine plastic ornamentation was applied to the knob handles and occasionally to the legs also. The designs represent chiefly heads of jaguars, alligators, turtles, and birds. Fragments of tripod vessels with legs modified into animal legs may also be found; sometimes these legs are hollow and contain clay balls as rattlers. In the shell mounds or kitchen middens near the sea fragments of pottery vessels with figurine handles have been discovered. A geometric motive, which is often found on old pottery vessels and on stonework, is the incised guilloche or rope pattern, which may have a curvilinear or an angular construction.

ANCIENT CLAY MASKS.—From the interior of the Mosquito Coast, 172 probably the Sumu territory, the discovery of human heads, busts or ●532 entire figures, made of clay, has been reported. The material used for this purpose is said to have been mixed occasionally with gold dust. These objects are supposed to be the likenesses of chiefs or other prominent persons who had been buried at the spots where these finds were made. A number of these "masks" were brought to England from the interior of the Mosquito Coast about the year 1775, and eight of them have been described and depicted by Rogers (107). As these masks have their backs concaved in a cylindrical form, they were probably parts of sepulchral urns.

COTTON TEXTILES

248 CULTIVATION OF COTTON.—The art of weaving has not been mastered by the young generation, but cotton (*Gossypium* sp.; M.: *wahmuk;* S.: *wahmak*) is still cultivated in a desultory way. The bushes, which attain a height of from 8 to 12 feet, may be found in the neighborhood of almost every hut; they flower the whole year round, and at any time buds and open bolls may be found on the same plant.

286 A FEMALE OCCUPATION.—Dyeing and spinning cotton and weaving 462 it into cloth is exclusively woman's work. Exquemelin (Fr. edit.: II, 269), who wrote during the second half of the seventeenth century, states that the women only spin the cotton and that the men do the weaving.

286 TYPES OF FABRICS.—The elder Sumu women still weave cotton into loin cloths (M.: *palpura;* T. and P.: *dõih;* U.: *ani*), girdles or

1: Conzemius M-4, 5 (1921) 1932
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it with sulphur. They apply a thin coat of the milk on cloth for the making of waterproof traveling bags, hunter's bags, and ponchos or raincoats. This industry is, however, chiefly in the hands of the Ladinos.

WOOD CARVING.—Wooden stools (M.: *sulati;* T., P.: *sini;* U.: *panka*), carved with the machete and the adze from a solid block of wood, are in universal use. In olden times these stools had three well-centered, elaborately decorated legs and a beautiful bird or animal head, reminding much of the metates which are occasionally found in the ancient sites.

Formerly a sort of walking stick or scepter of hard wood, surmounted by a carved human head, was an insignium of office and authority, but this custom has been introduced apparently by the English or Spanish, as there is no native name for it. Similar sticks now belong to the outfit of the Miskito sukya.

The central house post of the old-fashioned Sumu hut was also elaborately carved. The art was also practiced on various wooden domestic implements, as for instance the large wooden spoons (M.: *kustara;* T., P.: *pan-yamna;* U.: *kusara*) and the cradles (M.: *kuhsat;* T., P.: *pala;* U.: *lim*). Wood carvings generally represent animal or human heads, or geometric figures, rarely floral designs. At the festivals of the dead celebrated by the Miskito headdresses carved into animal or human heads are sometimes worn.

ENGRAVED CALABASHES.—The common calabashes (M.: *kahmi, kasni;* S.: *sutak*) of the Miskito and Sumu are often engraved with simple geometric designs, such as triangles, circles, zigzag lines, parallelograms, which recall those used in tattooing, on pottery vessels and painted tunu cloth, or the ones found on the large river bowlders. According to the Indians, however, these are merely impromptu inventions and serve no other purpose but that of identifying their calabashes. An elaborately carved and painted calabash, obtained from a Sumu chief of Rio Bocay, has been described and depicted by Sapper (f, 206–210).

BEADWORK.—The women of both tribes are very clever in making pretty bead ornaments of various colors to be worn around neck, wrist, below the knee, and above the ankle; the men also occasionally use them as watch fobs and as hatbands. The designs are chiefly animal, especially of snakes. Two patterns of beadwork have been pictured by Sapper (a, 274), one representing paddle handles, the other the skin of the *ribaya* salamander. The Indians utilize small glass beads (M.: *lilpara;* T., P.: *ala;* U.: *tasaska*), which they obtain from the foreign traders. The colors preferred are green, blue, black, and white, while red, brown, and yellow are only sparingly used. Pelschner (137), however, states that the blue beads are not liked by the Miskito and that the red and yellow ones are preferred by

1: Conzemius M-4, 5 (1921) 1932
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woman if her husband was a buccaneer, but men were not bound to carry it out at the death of their wife. Exquemelin does not state what was done ultimately with the bones. The custom points toward the practice of endo cannibalism, which was widespread in South America, and which consisted of grinding up the bones of the deceased and consuming them in a drink. Exhumation has not been mentioned from the Mosquito Coast by subsequent travelers.

SUMU BURIAL CUSTOMS.—Our knowledge regarding the former burial customs of the Sumu is more rudimentary. Cremation and secondary urn burial appear to have been made use of occasionally; in the former case the ashes were placed in an earthen vessel, as did the more advanced tribes of the Pacific slope of Honduras and Nicaragua. The common people, however, were probably merely inhumed.

On account of the dense jungle the old burial grounds are difficult to discover. Sometimes they are indicated by low mounds which yield fragments of pottery and metates, or spindle whorls, greenstone beads, etc. A large one of these burial sites is found at the bank of Rio Punta Gorda, near its junction with Rio Pejivalle; smaller ones can be found in many other parts of the coast. In certain regions of the Atlantic slope of Honduras, apparently occupied formerly by the Paya, as at Bonito Oriental, Piedra Blanca, and Siriboya, there are high mounds surrounded by walls.

In Chontales (Nicaragua), which department was formerly occupied by the Ulwa, secondary burial was practiced; the remains were deposited upon the summit of a hill or in an artificial mound in the savanna. The spot was often marked with a cairn of loose rocks constructed in the shape of a parallelogram, varying greatly in size. The sides of these structures were either sloped or perpendicular, and the edge of the upper surface was furnished with a parapet. Fragments of rude statues placed on them have been found, and it would appear as if there were one or several large ones in the center and a small one at each corner. Boyle (a: 43–44) describes a very large cairn, measuring about 55 by 40 yards and close to 10 feet in height, which stood in the neighborhood of La Libertad on the summit of a mound 60 to 70 feet high.

Rogers (107) gives a short description of masks for the faces of the dead chiefs brought about 1775 from the interior of the Mosquito Coast, undoubtedly from the Sumu country. They were made of clay mixed sometimes with gold dust and were said to be the likeness of chiefs or other prominent persons who had been buried at such places. In many parts of America such face masks were used on mummies; we do not know, however, if the art of mummification was known on the Mosquito Coast. This practice had been observed by Columbus at Cariay (Atlantic coast of Costa Rica) in 1502 and was probably limited to men of rank. Rogers has de-

1: Conzemius M-4, 5 (1921) 1932
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764 ● 532 picted eight of the above-named masks; most of them have their backs concaved in a cylindrical form, by which we might imagine that they were parts of sepulchral urns. (See also Roberts, pp. 299–300.)

775 CATCHING THE SOUL OF A DECEASED PERSON.—Upon the death of a person the soul (M.: *iwiñni*) or "shadow," as the Creoles say, leaves the body and remains about the house. After the burial it is "caught" by the sukya and taken to the grave; otherwise it will roam about and do all sorts of mischief. This custom has been introduced among the Miskito by the West Indian Negroes; recently it has spread to the Twahka and Panamaka.

This action takes place at night by a very dim light. The task of the sukya appears to be by no means easy. Sometimes he fails to catch the soul on the first night and has to do everything over again on the following day. He throws himself into a state of ecstasy and then dances around the bed of the deceased, over which a white cotton sheet has been spread. Then he sits down in a hammock which has been slung near by and he communicates the messages received from the dead during his supernatural state. The latter might give him the names of the persons who owe him some money or have failed to return a borrowed object. If he owns some young trees, the fruits of which he has not yet tasted, he will order them cut down without any further delay. Toward daybreak, when all the people present are more or less drunk, for intoxicating beverages are served to all the guests, the sukya seizes some insect, generally a firefly or a beetle, which he pretends to be the soul of the deceased. He wraps it up quickly in the bed sheet or incloses it in a bottle and then takes it to the grave.

Some of these sorcerers are said to be able to catch the soul of Indians who have died far away from home. This is, however, a more difficult task, as the soul may keep him waiting for a whole week, until it condescends to be taken to its final resting place. Formerly the soul was supposed to enter animals or other objects belonging to the deceased, and these had to be killed or broken to drive the intruder out.

THE HEREAFTER

Both tribes believe in the immortality of the soul and its translation to a realm of happiness and bliss. Remains of this belief are seen in the burial customs, for certain objects are given to the dead which are indispensable to him during his long journey to that final resting place. Some Indians make the future existence dependent on present conduct, but this idea has undoubtedly been borrowed from Christianity.

[177]

2: Kirchhoff E-4 (no date) 1948
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415 Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

412 Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and [38] knives made of split bamboo. Three-legged wooden stools were formerly [32] richly carved, often having a bird or animal head. Spoons, ladles, cradles, [31] and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

411 **Weapons.**—*Mosquito*, *Sumo*, and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque*, an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella*. Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib*, and both types are used by the *Cuna* and *Chocó*.

POLITICAL ORGANIZATION

622 Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

1: Conzemius M-4, 5 (1921) 1932
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MUSICAL AND SIGNALING INSTRUMENTS

The music is chiefly instrumental; vocal music is seldom heard, and is chiefly performed by the sukya in practicing his incantations.

DRUM.—Our common drum, known by its English name (M.: *drum;* S.: *durum*), is the favorite musical instrument among the men; it has been extremely popular ever since its introduction by British garrisons during the eighteenth century. The Indians make it themselves and beat it at their drinking bouts with the aid of the wooden drumsticks (M.: *mihta;* S.: *tiāsi*).

The horizontal hollowed-out log drum with an H-shaped cutting made longitudinally (the *teponatzli* of the Mexicans and the *tunkul* of the Maya), which is used for signaling purposes in different parts of America and Melanesia, appears to have been unknown in the region under consideration. The common drum is sometimes used to advise the neighbors of a misla feast.[a]

The upright native drum (M.: *kunbi, kunbaya;* S.: *pañtan, panatañ*) is goblet shaped and hollowed out from a solid block of mahogany or cedar; it has a height of about 3 feet at least, including the pedestal base, which is carved from the same block of wood. The smallest diameter is at the bottom just above the pedestal support. The drumhead at the top is formed by a piece of animal skin (deer, toad, iguana, or tapir); it is held taut by means of a strong rope which is attached to the pendent edges of the skin and firmly tied to the shell of the drum. It is beaten with the hand and used only at the festival of the dead. This instrument corresponds to the *huehuetl* of the ancient Mexicans.

RATTLES.—Round or egg-shaped gourd rattles, the common playthings of our babies, figure among the musical instruments of the Mosquito Coast, and are found in use all over the New World. They are handled chiefly by the women, particularly at the festivals of the dead, in order to mark the measure at the dances. These rattles are made from the fruits of the calabash tree, from which the pulpy contents have been removed through a circular opening at the stem; small stones, pebbles, hard seeds, or beans are then introduced. Finally, a close-fitting stick, which acts like a handle, is introduced; it tapers somewhat toward the distal end, which is thrust entirely

[a] The foreigners living on the Mosquito Coast jokingly use the phrase "bush telegraph" to refer to the rapid way in which news sometimes travels, but there is no such mysterious way used by the Indians. It is claimed that the Miskito living on the savanna near the sea occasionally spread news by the signal of making a savanna fire. But such a signal could not be very definite as these fires are generally kindled for no purpose but to burn the grass and low thicket. Sometimes men from villages far apart come within shouting distance of one another when hunting. It is also claimed that some men have a "whistling language," and are able to communicate any sentence correctly by whistling.

1: Conzemius M-4, 5 (1921) 1932
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hands of an Indian from the neighboring village of Cuje, who called it "quijongo" or "sambumbio." It was at least 5 feet in length and 1½ inches thick. A little from the center the string was tied back to the arc with the aid of another thread, so that two strings of unequal size were formed. This instrument could produce a great variety of tones. In Olancho (Honduras) I saw later a bow of equal size but with a calabash resonator; it was called "caramba" there. The gourd was fastened with the mouth downward at the convex surface of the arc, at the same point where the cross string had been attached to the wood, that is, about one-third the distance from one end. The Rama of Nicaragua also call this instrument *luñko*, while among the Lenca of Honduras it is known as *bumbum;* it is also found among the Kekchi of Guatemala, and was known to the Island Carib of the seventeenth century, according to De Poincy.

In spite of the fact that in Central America the musical bow is limited to the pure Indians, it is supposed to be, like all other stringed instruments, of foreign origin. The various names by which it is known in Central America savor of African origin. It is also found in certain regions of South America and has a wide distribution under different forms in large areas of Africa and Melanesia.

OTHER INSTRUMENTS.—Violins, guitars, accordions, and harmonicons may be found in certain regions; they are chiefly of German manufacture. Instead of beating the drum or shaking the rattle, the Miskito occasionally clap the hands together at the dances in order to obtain a rhythmic effect.

AMUSEMENTS: SONGS, DANCES, STORY-TELLING, GAMES, AND SPORTS

SONGS.—The Sumu rarely sing (M.: *diwanaya;* T., P.: *diwannin, diwannini;* U.: *unbdinaka*), but the Miskito sing occasionally when they are either sad or happy. All their songs are soft and plaintive, and they all sound alike to the stranger, who is unable to distinguish the gay songs from the sad ones, unless he has lived some time among the Indians. The sukyas of both tribes sing upon practicing their rites of incantation, but owing to their intermingling of many old and obscure phrases, these songs are unintelligible to the other Indians.

I was unable to collect any indigenous song, but Young, Fellechner, and Bell have been more fortunate than I. In these songs appear many phrases not used in general conversation. Fellechner (268) obtained a number of songs which were apparently composed in an antique form of the Miskito language, for the interpreters were unable to give the meaning of many parts of them. Most of this material has never been published. The following specimen is that

1: Conzemius M-4, 5 (1921) 1932
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Occasionally both sexes
765 perform very "tame" dances which they have apparently learned
535 from the foreigners. One dance, which does not lack a certain grace, is performed by the young women, forming a half circle. They place the left arm around the neck of their neighbor and perform slow movements of the body to the rhythm of calabash rattles which they hold in the right hand. Occasionally they utter a soft melancholy song.

765 Several young men are continually playing reed flutes or flageolets
533 (*bra*), while others beat a skin membrane drum (*kuñbi*) with the palm of the hand. Most of the "music" performed consists of conventional imitations of the voice of animals or birds; the dancers accompany it by imitating the gait or the actions of the particular animal or bird.

765 Toward midnight two or three old men play on very long, stout bamboo flutes, which produce such an unearthly noise as to really scare a stranger. These instruments are said to be blown in order to direct to the feast two or three masqueraded figures which are supposed to come from the forest. As soon as the latter approach the hut all the women run inside, for they are not supposed to see them. The relatives of the deceased person immediately cover their faces with a cloth and then begin to lament and cry, for the masqueraded persons have some connection with the departed one. They try to injure themselves by knocking the head against the house posts, or by inflicting wounds on themselves with the aid of arms, rocks, or other objects, but the guests intercede and prevent them from harming themselves in a serious way. At a *sikro* on Rio Plátano I was witness when an old woman made a deep cut in her arm with the aid of an old, rusty machete. The maskers walk a few times around the hut, but after having been engaged in conversation by the sukya they return to the bush whence they had come. In order to induce them to depart some of the men make a strange noise on a flute (*yul*) made from the *kliswi* reed and having some beeswax applied to the mouthpiece. As soon as they have left the women dry their tears, and they are again as happy as before, for they know now that their deceased relative will within a short time arrive safely at the land of hereafter.

The head and shoulder piece of the masquerade dress is made of a piece of tanned skin or of the inner bark of certain trees; it is painted red and black. Holes are made in the part covering the face to correspond to the wearer's eyes. Dry grass is used to simulate hair, while a crinolinelike fringe of palm leaves depends from the shoulder piece, so that nothing but the legs of the wearer are visible. The headpiece is surmounted by an upright bar of light wood with the likeness (*lilku*) of a certain animal or object. All

2 [At the festival of the dead – Analyst]

2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

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DRUM.—Our common drum, known by its English name (M.: *drum;* S.: *durum*), is the favorite musical instrument among the men; it has been extremely popular ever since its introduction by British garrisons during the eighteenth century. The Indians make it themselves and beat it at their drinking bouts with the aid of the wooden drumsticks (M.: *mihta;* S.: *tiñni*).

The horizontal hollowed-out log drum with an H-shaped cutting made longitudinally (the *teponatzli* of the Mexicans and the *tunkul* of the Maya), which is used for signaling purposes in different parts of America and Melanesia, appears to have been unknown in the region under consideration. The common drum is sometimes used to advise the neighbors of a misla feast.[a]

The upright native drum (M.: *kuñbi, kuñbaya;* S.: *pañtan, panatañ*) is goblet shaped and hollowed out from a solid block of mahogany or cedar; it has a height of about 3 feet at least, including the pedestal base, which is carved from the same block of wood. The smallest diameter is at the bottom just above the pedestal support. The drumhead at the top is formed by a piece of animal skin (deer, toad, iguana, or tapir); it is held taut by means of a strong rope which is attached to the pendent edges of the skin and firmly tied to the shell of the drum. It is beaten with the hand and used only at the festival of the dead. This instrument corresponds to the *huehuetl* of the ancient Mexicans.

RATTLES.—Round or egg-shaped gourd rattles, the common playthings of our babies, figure among the musical instruments of the Mosquito Coast, and are found in use all over the New World. They are handled chiefly by the women, particularly at the festivals of the dead, in order to mark the measure at the dances. These rattles are made from the fruits of the calabash tree, from which the pulpy contents have been removed through a circular opening at the stem; small stones, pebbles, hard seeds, or beans are then introduced. Finally, a close-fitting stick, which acts like a handle, is introduced; it tapers somewhat toward the distal end, which is thrust entirely

[a] The foreigners living on the Mosquito Coast jokingly use the phrase "bush telegraph" to refer to the rapid way in which news sometimes travels, but there is no such mysterious way used by the Indians. It is claimed that the Miskito living on the savanna near the sea occasionally spread news by the signal of making a savanna fire. But such a signal could not be very definite as these fires are generally kindled for no purpose but to burn the grass and low thicket. Sometimes men from villages far apart come within shouting distance of one another when hunting. It is also claimed that some men have a "whistling language," and are able to communicate any sentence correctly by whistling.

1: Conzemius M-4, 5 (1921) 1932
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534 through the shell, emerging through a small hole cut just opposite the stem end. With other specimens the handle does not pass through the calabash, but it is firmly attached to it by means of fiber strings passed through various perforations drilled in one end of the gourd. The seeds strike the inner wall of the thin shell and the central handle axis, resonating somewhat like castanets.

WIND INSTRUMENTS.—Flutes or flageolets (M.: *bra;* S.: *baru*) are in common use. They are about a foot in length, and are provided with two, three, or four finger holes. Beeswax is applied to the mouthpiece. They are made from a species of bamboo known by the Miskito name *bratara*.

Short 1-toned flutes are also made from the femoral bones of deer, tapir, or other large animals. They are used to lure the agouti by imitating the voice of that rodent, and from the purpose they serve are called *kyaki wasbaya* (M.), *malka kuñnin* (T.), *malaka kuñnini* (P.), or *malka kuñkana* (U.).

Several flutes are used exclusively at the festivals of the dead. A small flute (M.: *limi-mina, limi-dusa;* S.: *nawa-wakal*) is made of jaguar bone and has the mouthpiece covered with beeswax. Another short flute (M.: *yul*) is made from the thin *kliscñ* reed. Stout bamboo flutes, measuring up to 6 feet in length, with one end resting on the ground, are blown by the sukya. This instrument has a mouthpiece of bird skin and beeswax and has a number of lateral ventholes; it produces a loud noise not unlike the roaring of wild beasts.

Panpipes are unknown in the country under consideration. Pottery whistles are no longer manufactured, but a few specimens have been unearthed in the Rio Tinto (Honduras) region.

Conches (M.: *kiptaya;* S.: *masi*) are used as trumpets throughout the Mosquito Coast.

Jew's-harps (*yusap*) were introduced many years ago and are in great favor; they produce but few tones, but the music sounds sweet and soothing and has a great charm for the Indians.

MUSICAL BOW.—The musical bow (M., S.: *kuñku*), the only stringed instrument known in ancient America, produces a plaintive sound and is occasionally played by the Indian women. It is formed of a small wooden bow, chiefly of split bamboo or other tough pliable wood of 2 to 3 feet in length. Both ends of the bow are connected by a thin string of pita or silk grass. The bow is pressed against the mouth, which acts as resonator, and the string twanged by means of a pick of wood. Harrower (47) collected a large specimen on the Mosquito Coast in 1924 with a gourd for a sounding box and a string made of a heavy liana.

534 171 More complicated systems are found in other parts of Central America, but practically always among the Indians. In 1919 the writer saw at Ocotal (Nicaragua) one of these instruments in the

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hands of an Indian from the neighboring village of Cuje, who called it "quijongo" or "sambumbio." It was at least 5 feet in length and 1½ inches thick. A little from the center the string was tied back to the arc with the aid of another thread, so that two strings of unequal size were formed. This instrument could produce a great variety of tones. In Olancho (Honduras) I saw later a bow of equal size but with a calabash resonator; it was called "caramba" there. The gourd was fastened with the mouth downward at the convex surface of the arc, at the same point where the cross string had been attached to the wood, that is, about one-third the distance from one end. The Rama of Nicaragua also call this instrument *luñko*, while among the Lenca of Honduras it is known as *bumbum;* it is also found among the Kekchi of Guatemala, and was known to the Island Carib of the seventeenth century, according to De Poincy.

In spite of the fact that in Central America the musical bow is limited to the pure Indians, it is supposed to be, like all other stringed instruments, of foreign origin. The various names by which it is known in Central America savor of African origin. It is also found in certain regions of South America and has a wide distribution under different forms in large areas of Africa and Melanesia.

OTHER INSTRUMENTS.—Violins, guitars, accordions, and harmonicons may be found in certain regions; they are chiefly of German manufacture. Instead of beating the drum or shaking the rattle, the Miskito occasionally clap the hands together at the dances in order to obtain a rhythmic effect.

AMUSEMENTS: SONGS, DANCES, STORY-TELLING, GAMES, AND SPORTS

SONGS.—The Sumu rarely sing (M.: *diwanaya;* T., P.: *diwannin, diwannini;* U.: *unbdinaka*), but the Miskito sing occasionally when they are either sad or happy. All their songs are soft and plaintive, and they all sound alike to the stranger, who is unable to distinguish the gay songs from the sad ones, unless he has lived some time among the Indians. The sukyas of both tribes sing upon practicing their rites of incantation, but owing to their intermingling of many old and obscure phrases, these songs are unintelligible to the other Indians.

I was unable to collect any indigenous song, but Young, Fellechner, and Bell have been more fortunate than I. In these songs appear many phrases not used in general conversation. Fellechner (268) obtained a number of songs which were apparently composed in an antique form of the Miskito language, for the interpreters were unable to give the meaning of many parts of them. Most of this material has never been published. The following specimen is that

2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

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I thought I was alone, and had no children.
I remembered my daughters,
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My children have come back.
My heart is like the young plantain-leaf,
That shoots out when the sun shines.

535 ●

DANCES.—Dancing (M.: *dans pulaya*,[42] T.: *dans pulnin;* P.: *ahanini, danis pulnini;* U.: *ahanaka*) is practically limited to the various festivals and had perhaps originally a religious significance. Certain rejoicings of the Miskito, at which dancing takes place, are called *li-aikas* (lit.: "black water"), and others are known by the name *plamana;* the latter are celebrated in honor of some one who is leaving for a long journey.

The women perform individual dances which do not lack a certain *grace; they place the hands upon the shoulders or the head and make* various contortions of the body as they walk or jump around.

535 177

Some dances of rejoicing have been introduced by the Negroes or Creoles, and are performed chiefly around Christmas, which is considered a period of merrymaking by all these Indians, whether evangelized or not. The festivities last about two weeks. A great circle is formed with men and women alternating and joining hands or placing the right hand upon the left shoulder of their neighbor; in the center are seated one or two men beating drums, and at the rhythm the circle moves around.

538

STORY-TELLING.—The telling of stories is one of the favorite ways of passing the long hours at night before going to bed. The old Miskito, who lived under the good old days of the "Mosquito Kingdom," are always glad to talk of their armed expeditions into the "Spaniard's" country (Honduras, Nicaragua, Costa Rica), and to relate some bizarre exploits in connection with those wars. The Indians can relate an occurrence in the most animated manner, but they do not seem to invent tales or stories as do the Negroes.

When the Indian has returned from a hunting or fishing expedition he delights in giving a most detailed account of everything he noticed in the course of the day, even if nothing out of the ordinary occurred. He will give all the particulars regarding the game he saw, and relate in a most tedious manner how he succeeded in outwitting it and getting within gunshot of it. The narrator may keep on in this manner for hours, while his patient listeners occasionally interpolate an exclamation denoting their astonishment, surprise, doubt, agreement, or comprehension.

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[42] The word *dans* or *danis* is taken from the English.

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Occasionally both sexes

765 perform very "tame" dances which they have apparently learned
535 from the foreigners.[1] One dance, which does not lack a certain grace, is performed by the young women, forming a half circle. They place the left arm around the neck of their neighbor and perform slow movements of the body to the rhythm of calabash rattles which they hold in the right hand. Occasionally they utter a soft melancholy song.

765 Several young men are continually playing reed flutes or flageolets
533 (*bra*), while others beat a skin membrane drum (*kuśbi*) with the palm of the hand. Most of the "music" performed consists of conventional imitations of the voice of animals or birds; the dancers accompany it by imitating the gait or the actions of the particular animal or bird.

765 Toward midnight two or three old men play on very long, stout bamboo flutes, which produce such an unearthly noise as to really scare a stranger. These instruments are said to be blown in order to direct to the feast two or three masqueraded figures which are supposed to come from the forest. As soon as the latter approach the hut all the women run inside, for they are not supposed to see them. The relatives of the deceased person immediately cover their faces with a cloth and then begin to lament and cry, for the masqueraded persons have some connection with the departed one. They try to injure themselves by knocking the head against the house posts, or by inflicting wounds on themselves with the aid of arms, rocks, or other objects, but the guests intercede and prevent them from harming themselves in a serious way. At a *sikro* on Rio Plátano I was witness when an old woman made a deep cut in her arm with the aid of an old, rusty machete. The maskers walk a few times around the hut, but after having been engaged in conversation by the sukya they return to the bush whence they had come. In order to induce them to depart some of the men make a strange noise on a flute (*yul*) made from the *kliaú* reed and having some beeswax applied to the mouthpiece. As soon as they have left the women dry their tears, and they are again as happy as before, for they know now that their deceased relative will within a short time arrive safely at the land of hereafter.

The head and shoulder piece of the masquerade dress is made of a piece of tanned skin or of the inner bark of certain trees; it is painted red and black. Holes are made in the part covering the face to correspond to the wearer's eyes. Dry grass is used to simulate hair, while a crinolinelike fringe of palm leaves depends from the shoulder piece, so that nothing but the legs of the wearer are visible. The headpiece is surmounted by an upright bar of light wood with the likeness (*lilka*) of a certain animal or object. All

[1] [At the festival of the dead – Analyst]

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larger beasts, like the jaguar and the puma, and kills them by introducing itself into their stomach. 925

WATER TIGER.—The water tiger (M.: *li lamya;* S.: *was nawa*) is supposed to be a manateelike animal, but covered with otterlike, glossy hair and a mane. Different species are said to exist, which have the same variety of color as the various species of Felis, the black variety being, however, the most common. This beast has webbed feet and walks awkwardly on land, but it is very swift in the water. It is found chiefly in the larger rivers among the rocks, and will devour any one swimming in the neighborhood or falling into the water; domestic animals and even men are said to have occasionally fallen victim to it. The Indians claim to have shot at it, but never succeeded in killing a specimen.

GIGANTIC BOA CONSTRICTOR.—A very large waula or boa constrictor (M.: *wáhla tara;* T.: *wáhla;* U.: *wayil*) with two horns on the head like a deer [*] is said to inhabit certain large lagoons in the pine ridges, far away from the nearest Indian village. It is claimed that the common waula or boa turns into such a monster when it reaches old age, and that it then retreats into deep lagoons. Man has no power to kill such a boa constrictor, as bullets have no effect on it; it can be destroyed only by a stroke of lightning.

The creeks leading to the lagoons inhabited by the monster are generally rich in all sorts of game, for no one dares to ascend them. It is claimed that in case anyone should be foolhardy enough to paddle up such a creek, presently a rumbling of thunder is heard; then the water reverses its course, flowing at a tremendous speed back to the lagoon directly into the mouth of the boa constrictor, which swallows the canoe with the intruder. The boat-bill heron (M.: *ukaka;* S.: *awahta*), a most uncanny night bird, is said to be found at the mouth of such creeks in order to warn off intruders.

FABLES OR TALES DEALING WITH BEASTS AND BIRDS

The Miskito know a great number of tales in which animals and birds act, think, and talk like human beings; they are supposed to possess spirits and to live, eat, drink, love, hate, and die just like the Indians. 538 ● 171

These fables remind somewhat of the adventures of Ananzi—a sort of god or culture hero—of the Gold Coast; or, Turtle of the Slave Coast; or, Hare (the Brer Rabbit of the United States Negroes) among the Bantu. Heath (a: 52) has drawn attention to the re-

[*] For this reason the Ladinos call it "masacuate" (from the Mexican *mazatl* "deer" and *coatl* "serpent").

1: Conzemius M-4, 5 (1921) 1932
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538 171 semblance of these fables with the "anancy" or "nancy" stories[88] of Jamaica, so that one can hardly doubt a common origin, and these stories are certainly African.

The following Miskito fable has been given in the Indian tongue by Berckenhagen.[89] I submit herewith the English translation thereof under the title:

WHY THE HOWLING MONKEY NEVER DESCENDS FROM THE TREES

538 The tapir and the howling monkey went together into the forest. The tapir was foolish enough to play on a flute which he had inherited. When the howling monkey heard that he asked to buy the flute, but the tapir refused to sell the instrument, and kept on playing it. Then the howling monkey had an idea and he said to the tapir as follows: "As you are unwilling to sell the flute, just lend it to me for a moment to try it; whenever I shall have a flute I will also let you have it." Thereupon the foolish tapir handed the flute to the monkey. Immediately the latter hurried up a tree, whence he kept on blowing the flute without stopping. The tapir then wanted his property back, but the monkey paid no attention to him. Thereupon he became very angry and ran hither and thither in the water and among the spiny vegetation, but the howling monkey kept on playing the instrument. The tapir then decided to lie in wait for the howler, determined to kill him wherever he should find him on account of the flute. For fear of that the howling monkey does not dare to descend from the trees, not even in order to drink, and he quenches his thirst with the moisture from the leaves of the vegetation.

Beware of giving away your inheritance.

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[88] *Anancy* or *ananzi* is the term for spider in the Chi language of western Africa; this arachnid plays a great rôle in the larger part of the folk tales of the West coast of Africa from Cape Verde to Cameroon. The name "anancy story" is applied nowadays by the Jamaican Negroes to any legend, myth, or fairy tale which is being told at night, especially during a "wake." Our rural European populations likewise believe that a real ghost story ought to be told at night around the fireside.

[89] Grammar of the Miskito Language, by H. Berckenhagen. Bluefields, Nicaragua, 1894, p. 81.

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●539 of a Miskito from Cabo Gracias a Dios upon going away and leaving his sweetheart behind; it is given in German and Miskito (Fellechner: 268):

I will go far away from you,
Very great is my sorrow.
I am going to get beads for you,
Cloth will I bring back.
The east wind is blowing strong;
Your name I will sadly call.

The following song is found by Young (77–78) in English and Miskito:

Dear girl, I am going far from thee.
When shall we meet again to wander
Together on the sea side?
I feel the sweet sea breeze
Blow its welcome on my cheek.
I hear the distant rolling
Of the mournful thunder.
I see the lightning flashing
On the mountain's top,
And illuminating all things below,
But you are not near me.
My heart is sad and sorrowful;
Farewell! dear girl,
Without thee I am desolate.

Here is another specimen of a love song, recorded by Bell and published by him in English (6: 89) and Miskito (6: 312):

My girl, some day as you walk with your companions,
When the mist settles over the river mouth,
And the smell of the pitch-pine woods comes from the land,
Will you think of me and say:
"My lad, have you really gone away?
Alas! my lad, have I seen the last of you?
Shall I really never hear your voice again?
Alas! alas! alas!"
My girl, I am very sad for you,
I remember the smell of your skin.
I want to lay my hand on your lap,
But here I am lying under a tree.
In my ear I only hear the noise of the sea.
The surf is rising in the offing;
But I cannot hear your voice.
Alas! alas! alas!

Bell (b: 301) gives the following English version of a dirge, sung by the Miskito Queen-Dowager on Rio Coco upon the return of her daughters, who had been for some time at Bluefields:

Oh, my children, you have come back to me;
I was lonely without you.
Other women had their children. I saw them,
And my heart was sore with longing for my daughters.

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That shoots out when the sun shines.

535

DANCES.—Dancing (M.: *dans pulaya*,[42] T.: *dans pulnin;* P.: *abanini, danis pulnini;* U.: *abanaka*) is practically limited to the various festivals and had perhaps originally a religious significance. Certain rejoicings of the Miskito, at which dancing takes place, are called *li-aikas* (lit.: "black water"), and others are known by the name *plamana;* the latter are celebrated in honor of some one who is leaving for a long journey.

The women perform individual dances which do not lack a certain grace; they place the hands upon the shoulders or the head and make various contortions of the body as they walk or jump around.

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Some dances of rejoicing have been introduced by the Negroes or Creoles, and are performed chiefly around Christmas, which is considered a period of merrymaking by all these Indians, whether evangelized or not. The festivities last about two weeks. A great circle is formed with men and women alternating and joining hands or placing the right hand upon the left shoulder of their neighbor; in the center are seated one or two men beating drums, and at the rhythm the circle moves around.

538

STORY-TELLING.—The telling of stories is one of the favorite ways of passing the long hours at night before going to bed. The old Miskito, who lived under the good old days of the "Mosquito Kingdom," are always glad to talk of their armed expeditions into the "Spaniard's" country (Honduras, Nicaragua, Costa Rica), and to relate some bizarre exploits in connection with those wars. The Indians can relate an occurrence in the most animated manner, but they do not seem to invent tales or stories as do the Negroes.

When the Indian has returned from a hunting or fishing expedition he delights in giving a most detailed account of everything he noticed in the course of the day, even if nothing out of the ordinary occurred. He will give all the particulars regarding the game he saw, and relate in a most tedious manner how he succeeded in outwitting it and getting within gunshot of it. The narrator may keep on in this manner for hours, while his patient listeners occasionally interpolate an exclamation denoting their astonishment, surprise, doubt, agreement, or comprehension.

[42] The word *dans* or *danis* is taken from the English.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

539 Occasionally the old men tell about mysterious tribes which formerly inhabited the country. The following account of the Wiswis Indians was told to me in 1918 by the Miskito Ramón of Burimak (upper Rio Coco):

THE WISWIS LEGEND.—On the left bank of Rio Coco, near the present settlement of Saulala, there used to live a subtribe of either Miskito or Sumu.[82] Having once killed a great number of *wiswis* birds, they become known by the latter name. They refused to pay tribute to the king, and for that reason the latter treated them cruelly, and had them whipped frequently.

One day, while they were out hunting, they killed a number of wild hogs (*wari*), and cut some withes of a variety called *dar*, in order to tie the legs of the animals together and secure the latter on their backs. As soon as they had fastened the withes they could not see the peccaries any longer, although they were able to smell and to feel them. One of them then untied the withes and immediately the animals became visible again. This Indian then tied one of the withes round his own neck, whereupon his companions could not see him any longer. They now realized that the *dar* withe has the property of rendering invisible anything tied with it.

The Wiswis were glad of having made this discovery, and they decided to put it to practical use. When they heard of the king's envoys coming in order to collect the taxes they tied some of these withes round their houses, and the tax collectors were unable to find them or even locate their villages.

In spite of this sorcery the Wiswis were unable to escape the wrath of the king. In order to get away from their oppressive ruler they emigrated toward the interior, wandering overland through the vast savanna, which extends on the left bank of Rio Coco uninterruptedly to Rio Kahka (above Auasbila). From this latter place they are said to have reached Bocay eventually, but no one knows how; some claim, however, that they crossed over to Honduras.

Two rows of little cairns, which stretch in a straight line from Saulala to Rio Kahka, are attributed to the Wiswis. The latter are supposed to have placed them on both sides of their road during their long march inland. These tumuli are from 10 to 16 miles away from Rio Coco; from the village Auasbila it takes about half a day's march to get to them. They are still known among the Miskito by the name *Wiswis kauan* "placed by the Wiswis."

524 GAMES AND SPORTS.—The little boys play war and hunting games with toy bows and arrows; the latter are tipped with a wooden knob or with beeswax. Kites (M.: *istapla*), spinning tops (M.: *purmaya*,

[82] Lehmann refers to the *Visises* as a cannibal tribe of unknown origin, which settled at the Mosquito Coast about the twelfth century. These people finally departed, but no one knows whither (Lehmann, b: 716; c: I, 463).

1: Conzemius M-4, 5 (1921) 1932
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765 In the evening succeeding the death of a person a sort of "wake" is celebrated, to which the entire village is invited. Plenty of food and intoxicants are served to the guests, and a cow is butchered for its meat in case cattle are raised in the neighborhood.

MOURNING.—When a death occurs in a Miskito village all the neighbors assemble, and the women begin to lament one after the other. First comes the turn of the near relatives, as the wife of the deceased person. She throws a large cloth over her head and sits at the side of the dead body, leaning over him to smell the scent, which is the equivalent to our custom of kissing. Then she begins a sort of crying song or dirge in which she eulogizes the departed, enumerating his good qualities, real or supposed. This song has but one tune and time, but the words are improvised. She asks him why he has left her, if she did not treat him well, if she did not love him enough, and what wrong she could possibly have done him. She keeps on as follows: Who will take care of myself and of your children now? You were such a good husband! You were such an excellent hunter! You never missed the mark and kept us always supplied with meat! You were so skillful in making plantations, in handling the canoe, the gun, bow and arrow, ax, etc.! We are all so sad now and will never be happy again! Your children are always asking for you! She then menaces the one responsible for this calamity, for death is attributed to sorcery. As she keeps on in this manner, her feelings are worked up, and the final phrases are continually interrupted by sobs. After having lamented in this manner for about half an hour, she dries her tears and resumes her usual occupation as if nothing had happened. One of the other women will then cry over the dead body. This manner of mourning is repeated by the female relations for two weeks after the death of a person, twice a day, a little before daybreak and again at sunset. After this period it may be done by the mourning woman whenever she is sad and reminded of the dead.

Bell has recorded the following song of a Miskito girl from Rio Wawa, mourning for her dead mother; he gives it in English (b:91) and in Miskito (b: 312):

539 765

Alas, mother, poor mother! Alas, mother, where have you gone?
Here are your children crying for you;
Yesterday we were talking together, but now you are lying there.
Alas, mother, did you go from us in anger?
Did we not love you?
Your husband sits outside with his head hung down.
Here the women are sitting with their heads covered,
All for love of you.
But you have abandoned us.
Alas, that I shall never see your face again;
That I shall never hear your voice again.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

776 825 to this fictitious being are given by Bell (b: 221–224). I submit herewith a Sumu story dealing with the peccary owner, which I propose naming:

The Adventures of the Peccary Hunter

539 A Sumu went out to the bush to hunt the white-lipped peccary (*Tayassu* sp.). Suddenly he came upon a drove of a white variety, called *sdiakaya*, with very long tails and tusks. All of them were very fat. Our Indian had never seen a specimen of this variety before, but he had heard of its existence from the older people, who had, however, never succeeded in killing one.

He stalked upon them, but at the very moment he got his bow and arrow ready to shoot the whole drove made off at great speed. He followed their trails, determined not to go home without one of them. After a while he caught up with them, and saw them feeding on the fruits of the hog plum tree (*Spondias lutea* L.), but again they made off all together when he was at the point of sending an arrow at them. This was repeated again and again, and our Indian was unable to make use of his arrows. Still he kept on following them.

Suddenly he saw the whole drove disappearing into a cave. He followed, although it was pitch dark inside, for he could smell and hear them. After a while he came to a wall of solid rock which blocked his passage. He then made a small incision under his tongue and applied a little blood crosswise upon the rocks. Immediately the latter receded and he was able to proceed. Again he could hear and smell the peccaries in front of him. This was repeated several times.

Finally the Indian saw a streak of light ahead of him and directly he found himself outside the cave in a strange country, which abounded in the various varieties of peccaries. The large white kind, the *sdiakaya*, must have been the favorite food of the inhabitants, for in every house they were preparing a specimen for the table. The people were not friendly toward our Sumu, and they resented his having come to their land. He explained to them how it all happened, and that he was anxious to secure some meat for his wife and children. They told him then that they were the owners of all the peccaries, and that occasionally they sent some droves to the Sumu country, so as to enable the inhabitants there to have some meat to eat occasionally. But the white peccary (*sdiakaya*), they proceeded, "is for our exclusive use and for that reason the Sumu have never been able to shoot any of them." The people fed our Sumu and gave him a whole white peccary to take back home to his family. But they warned him not to mention anything about his adventure, as that would cause his immediate death. Then he was told to close his eyes, and some one took him by the hand and led him away. After

1: Conzemius M-4, 5 (1921) 1932
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a little while, feeling himself alone, he opened his eyes, and looking around, he found himself only a few steps from his own house. 539

Upon getting home, his wife wanted to know where he had been so long. He refused to tell the truth for fear of the revenge of the people from the peccary country, and told her that he had been lost in the bush. But she noticed that he was hiding the truth and kept on insisting that something extraordinary must have happened for his having succeeded in killing a *sâuakaya*.

Finally he agreed to tell. He sat in his hammock, while all the neighbors surrounded him to hear the details of his strange adventure, and then he proceeded to narrate everything that had happened to him since he left home. But the moment he finished his story he died.

WITCHES.—Certain people of either sex are supposed to be greatly addicted to witchcraft, and to be able to transform themselves at will into owls or "lechuzas" (M.: *imi yula* or *kimi yula;* S.: *yala môih*[31]). 754

Some bad people transform themselves into a smaller species of owl (T.: *yarak;* U.: *sôi*) and in their zoömorphic form introduce themselves during the night into the huts of their enemies, when the latter are asleep, in order to carry off the small children. The Miskito do not participate in this belief.

CYCLOPS.—In the bush lives also a curious being, shaped somewhat like a giant human being, but having a head similar to that of a dog. It has only one eye, while its large mouth is at the navel. 776

WATER NYMPH.—The mermaid or water nymph (M.: *liwa;* T., P.: *was melhni;* U.: *was sirâu*) is an evil water animal, which occasionally causes snags and strong ripples where the water otherwise is very smooth. It drives the fish away so that the Indian can not catch anything, and it incites the alligator to attack the canoes and upset them. It also assumes the shape of a beautiful woman and walks on land to entice the young men down to the waterside, when suddenly it pushes its victim into the water and devours it. Its head is that of a human being, but the body resembles that of a fish. This monster is also said to inhabit the sea, where it occasions waterspouts and hurricanes; the Miskito living at the coast call it also *kabo wlaska* "sea spirit."

WAIWIN OR WAIWAN.—This name is applied by Miskito, Sumu, Rama, and Creoles to a black, doglike bush animal, with a nose shaped like that of the large anteater and with fiery eyes similar to balls of fire. It corresponds approximately to the "cadejo" of the Ladinos. Its claws rattle on the ground as it runs along with great swiftness. It spits fire and does not do any harm if left unmolested, but will throw down on the ground any one trying to stop it. There 825

[31] Lit., "people of the stars."

3: Pijoan D-5 (ca. 1945) 1946
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[164] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [751] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (inpression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [165] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[122] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[88] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[88] Brumpt, E. Precis de Parasitologie, 4th ed., 1927, Paris.

1: Conzemius M-4, 5 (1921) 1932
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death. At the conclusion of the third day the woman bathes herself in a neighboring creek and then rejoins her family. All cooking or drinking vessels used by her during this period are broken and thrown away. 841

Among the Sumu similar beliefs are held with regard to menstruation. The woman, however, never leaves her home, but she remains secluded in a corner of the house, a cloth partition separating her quarters from the rest of the hut. The Miskito habit of retiring to a provisional ranch or "going to the bush" (M.: *untara dimaya;* T., P.: *asañpas kana;* U.: *asañpas awañ*) has never been practiced by the Sumu, and it would appear as if it was in former days also unknown among the Miskito. In fact the Sumu state that the menstruous woman must keep away from the bush, where she might be attacked by jaguars, pumas, or snakes, or where she might be seduced by a spirit in anthropomorphic or zoömorphic form. When the three days are over the woman takes a steam bath at home. The latter is prepared by heating a few large white stones and then pouring water upon them, while the woman will bend over them with a thick blanket thrown over the naked body. After this she is no longer considered unclean.

CELIBACY.—Celibacy is considered as something abnormal and uncanny among the Indians; people leading presumably an irreproachable celibate life are supposed to practice sexual intercourse with spirits. 599

PROSTITUTION.—Prostitution is now met with among the Miskito inhabiting such settlements as have a large percentage of foreigners or Ladinos, but this has never been a recognized institution as among the more civilized tribes of Mexico and Central America. 548

POLYGAMY.—Polygamy exists, but it is not very common, and is generally limited to men of rank, as sorcerers. I have known Indians with 4 and even 5 or 6 wives, who all lived under the same roof. Each one of the women had her own hearth and cooking utensils and she prepared the food for herself and her children. The husband ate wherever he preferred. When he wished to buy something for his favorite wife he must treat the others alike in order to avoid scenes of jealousy which, it must be said, are very rare. The women have rarely a dispute with each other; sometimes they are all sisters, the oldest one, however, being generally the mistress of the house. They call each other *lahma* (M.) or *kaltiñ* (S.). Sometimes an Indian with wife and children may adopt a young orphan girl with the intention of making her his wife when she arrives at puberty. 595

According to Henderson (223) the Miskito King George, who governed at the beginning of the nineteenth century, had as many as 22 wives. M. W. (309) and Sloane (a: I, p. LXXVII) mention the existence of polygamy for this tribe; elsewhere, however, the

1: Conzemius M-4, 5 (1921) 1932
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hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yañ*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

1: Conzemius M-4, 5 (1921) 1932
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551 177 These old Indian names have now practically been superseded by Spanish or English names. On the coast English names seem to be preferred, but in the interior nearly all the names are taken from the Spanish language. The Indian generally takes only one name, which may be either a Christian name or a surname; from time to time they change it. A well-known Miskito of Rio Patuca, the owner of many cattle, even took the name "Honduras."

Foreigners traveling on the Mosquito Coast are frequently asked by the Indians to name their youngest child. It is often difficult to find a name which is acceptable to them, as they do not want any which is already found in the region. M. W. (304) tells us that at the end of the seventeenth century the most prominent Miskito all had names given to them by the buccaneers; every one of the adventurers stopping at the coast was asked to give a name to one of the Indians, and the latter thought that the same buccaneer could not well give a name to more than one Indian.

551 The mentioning of a deceased person's name is taboo among all the tribes under consideration, and it is a direct insult to mention it in the presence of his relatives.

551 177 But at no time does the Indian like to be addressed directly by his name. It is therefore often difficult to find out their real name, especially of the women, who are generally known as So-and-so's wife, daughter, mother, sister, etc. In former days this was the case with the men, too, but owing to their working in the mahogany camps, gold mines, and other enterprises, where they had to give their name in order to be distinguished from the other laborers, this aversion has gradually disappeared. While in charge of a mahogany camp on Rio Coco I had great difficulty at first in obtaining the names of new laborers, especially of the Sumu. They would invariably tell me that they were the son of So-and-so, or they gave me the name of the village they hailed from. However, if there were other Indians present one of the latter would promptly answer my question by telling me the name of the particular Indian I had addressed.

601 The series of relationship words, by which the members of a family address each other instead of proper names, is very complicated among the Miskito, and may be replaced by a whole new series when a death occurs in the family. Husband and wife call each other *mayi* "my consort." Before any child has been born to them the husband often calls his wife *kika* "girl," while she calls him *wahma* "young man." After the birth of the first child they often call each other *luhpi yapti* "my child's mother," and *luhpi aisa* "my child's father," respectively. After the death of a child they apply to one another the name *sukrika*. The words *mahma* or *masa* are frequently used to address a son or brother, while *kika* or *misis* are the forms of address for daughter or sister.

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little 674
wrong-doing exists among the Miskito since once a wrongdoer is found 626
out he loses the respect of his community and usually moves to another locality. If a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. 682
This is accomplished by the use of poisonous extracts from plants, alli- [278]
gator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he [762]
commits suicide, wherepon the offender must do the same. In most [674]
instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and 157
generally reliable. Stinginess is considered the worst vice and foreign- 177
ers who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and 551
relation, such as mother, father, daughter, brother, etc. Each has a 601
name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a [784]
direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wakma*, young man. After a child is born they often call each other *lukpi yapti*, my child's mother, and *lukpi aisa*, my child's father. *Makma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *luka*, grandmother. The common form of salutation is *naksa* and oc- 576
casionally *nakki sma* (how are you?) The other replies *aiswa sma* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of water- 361
ways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

1: Conzemius M-4, 5 (1921) 1932
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the pulp surrounding the wild cacao (*Theobroma bicolor* ?). This same writer (b: 308) likewise mentions a drink made from coconuts; it was sweetened by the addition of ripe plantains or wild honey.

GOVERNMENT AND SOCIAL ORGANIZATION

There is no trace of any division in clans or exogamic kinship groups. The tribal organization of these primitive tribes was essentially along democratic lines.

In former days the Miskito do not appear to have been ruled by a supreme chief, except during war time, when a commander was chosen by an assembly of the old men, in order to direct the military operations (M. W.: 307). The choice fell generally upon a warrior celebrated for his prowess. According to Exquemelin (French edit.: II, 264) preference was given to an Indian who had accompanied the buccaneers, but with the restoration of peace his authority ceased.

In the legends of the Miskito there are records of individuals seizing the powers of government by violence. The insignia peculiar to a chieftainship seemed to consist of a wooden scepter and of a metal breastplate depending from the neck. The powers of the numerous priest-doctors (*sukya*) were also very great, but it is not known just how much they intervened in governmental affairs. It appears, however, that occasionally the temporal and spiritual heads were both centered in the same person.

Hereditary chiefs did not rule the Mosquito Coast until after the establishment of British influence. One of these chiefs, a Miskito, was later raised to the rank of king; he became a tool in the hands of his foreign protectors, with whose aid his nominal authority was extended over the larger part of the coast. A silver crown and a scepter of little intrinsic value were bestowed upon him by the British authorities of Jamaica. The rule of the Miskito "king" was absolutely despotic. His orders were carried out by his quartermasters (*kuatmas*); the latter carried a cane or staff, which symbol of authority was apparently introduced by the English or Spaniards. A silver medal, sword, or anything else known to belong to the king would also do. Such a token established the credibility of the bearer and an immediate compliance with his orders. Foreign traders also applied to the king for such an object which served as a passport; every Indian was compelled to render him assistance, lodge him, sell him food, and furnish him with the means of continuing his journey, against reasonable pay. That the Indians of the interior did not pay much attention to such commands need hardly be told.

Besides the king, there were three other important rulers among the Miskito, who governed comparatively large areas and were known as "general," "governor," and "admiral." Numerous minor

3: Pijoan D-5 (ca. 1945) 1946
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304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 624 There is no trace of any division in clans or exogamic kinship groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would chose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kwatmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government education [871] is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The In- [154] dians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

674 626 Within the villages themselves government takes place with the elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

1: Conzemius M-4, 5 (1921) 1932
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444 gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, [511] even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

438 INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by [435] barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[38] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

556 These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

317 FORMER ARTICLES OF BARTER.—The Miskito used to evaporate 438 salt from the water of the sea and lagoons and collect pretty sea shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

484 During the latter part of the seventeenth century, and for many years following, the Miskito undertook daring sea voyages as far south as Chiriqui Lagoon in Panama, and occasionally even beyond that region. These expeditions were, however, not organized with peaceful trading in view, but for the purpose of stealing cacao from [721] the Spanish settlers at Rio Matina (Costa Rica), and capturing Indians to be sold to the English traders of Jamaica.

439 PRESENT-DAY COMMODITIES.—Nowadays the Indian's wants from the outside world are many. The Miskito, who are less primitive than their neighbors, were already in commercial relations with

[38] According to G. N. Collins (see Safford in Smithsonian Report for 1916, p. 421) this use still persists in the Mexican State of Chiapas.

1: Conzemius M-4, 5 (1921) 1932
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Meanwhile the Twahka lived in the bush. They were wild and unkempt; their hair fell to their knees and they were full of lice. Finally the King of the Miskito sent for them and captured them; he had them washed and altogether regenerated them, so that he won their love and obtained their support.[1]

The language of the Miskito is closely allied to that of the Sumu, but it also contains many foreign words. It is very probable that the Miskito were originally a subtribe of the Sumu, and that they have become greatly modified in the course of the centuries through intermarriage with Negroes, Europeans, and other Indian tribes. Already in 1875, at a time when the relationship of the Miskito and Sumu languages was still unknown, Zúñiga Echenique (209) considered the Miskito as the offspring of fugitive slaves with Twahka women. Of the various Sumu subtribes still existing, the Bawihka is the one which linguistically and ethnographically presents the greatest affinity to the Miskito. The Bawihka formerly occupied the region immediately adjoining the coast line where the Miskito were met with by the first Europeans during the latter part of the seventeenth century. These facts induce me to believe that the hybrid tribe of the Miskito owes its origin to the intermarriage of the Bawihka with the Negroes escaped from the slave ship which was wrecked to the south of Cabo Gracias a Dios in 1641.

These Africans arrived on a Portuguese slave ship captained by Lourenço Gramalxo. The vessel had taken its black cargo on board while anchoring at the Guinea Coast, and then headed for Brazil. While on the high seas the Negroes revolted and made themselves masters of the ship. Not knowing anything about the art of navigation they allowed their vessel to be carried by the trade wind and ocean currents toward the coast of Central America, where it became wrecked on the Mosquito Keys, situated a little south of Cabo Gracias a Dios. The Negroes, who were able to reach the mainland, were captured by the Indians and reduced to slavery. They were, however, allowed to intermarry with their masters, and their children grew up as free members of the tribe. (Vide Peralta, b: 57–58, 121; Exquemelin, French ed.: II, 276–277; Edwards: V, 210; M. W.: 303, 307.)

Henderson (216) states, however, that these Africans proceeded from the Samba country in West Africa and that their vessel was Dutch. This is repeated by Roberts (153), Young (71–72) and De Kalb (37). The last named author further specifies that the vessel in question was wrecked in 1650 and that the Africans proceeded from Samba Island at the mouth of the Cassiri River in Senegambia. Bell (b: 3) likewise considered the vessel as Dutch and says that it was wrecked near Dakuna at the beginning of the eighteenth century. This date is, however, incorrect.

[1] The addition regarding the Miskito King is of recent date. No mention is made of the other Sumu subtribes, as the Panamaka, Bawihka, or Kukra.

1: Conzemius M-4, 5 (1921) 1932
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721 selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

721 Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras) 197 to Chiriqui Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

721 The place names belonging to the Miskito language, which may be met with all along the Atlantic shore of Costa Rica and Panama as 103 far south as King Buppan's Bluff, owe their origin to the above-mentioned marauding expeditions (Conzemius, a: 300–306). Still permanent settlements were not made by the Miskito on that vast region, the southern limit of their habitat being formed by Pearl Lagoon, where they established themselves during the latter part of the eighteenth century. About that same period they also spread up some of the larger rivers, as the Patuca, Guagua (Wawa), Cucallaya, Prinsapolca, Rio Grande, and especially Rio Coco; on the last-named stream they may be found as far up as Bocay, that is, about 300 miles from the sea by the circuitous course of the river.

727 TREATMENT OF PRISONERS.—As stated before, the Miskito began their slave-hunting expeditions into the territory of their neighbors ●567 toward the end of the seventeenth century. The captive women and children were either kept as slaves (M.: *alba* [11]; S.: *warau*) or they were sold to the Jamaican traders who arrived occasionally on the coast. The boys, when arrived at the age of puberty, were allowed to take a Miskito wife, and the children of such unions grew up as free members of the tribe.

721 Slave-hunting expeditions in seagoing canoes were particularly directed to the Talamanca region (southeastern Costa Rica), where many Tiribi (Terbi) Indians were reduced to slavery. The same fate met the aborigines living around Chiriqui Lagoon (M. W.: 302; Peralta, a: 20, 93, 95; Peláez: II, 156; Young: 35; Conzemius, a: 300–301). Many references to the Miskito slavers may also be

[11] This word has evidently some connection with *albawina*, by which name the Miskito called the Sumu formerly, or perhaps all their Indian enemies in general. The Black Carib or Garif apply to the Miskito the name *tdudu*, which word likewise had originally the meaning of "slave." (Compare *tioto* "slave" in Father Gumilla's work.)

1: Conzemius M-4, 5 (1921) 1932
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Two men or two women may exchange their names, or merely some sort of personal property, in form of friendship, as a pledge of perpetual amity; they then call each other *libra*. This habit is common among the Miskito and is also found occasionally among the Sumu. Such friends are as dear to each other as brothers, and an Indian may trust his wife with perfect safety with his *libra*. 572

SALUTATIONS

COMMON FORM OF SALUTATION.—Handshaking (M.: *mihta sibaya;* T., P.: *tiñ isihnin;* U.: *tiñ isihnika*) constitutes now the general form of salutation, but this habit seems to be of foreign introduction. When two Indians meet the one will say: "How are you?" (M.: *naksa*, abbreviated from *nakki sma;* T., P.: *parasta;* U.: *yampara*), while the other replies: "I am well" (M.: *diñkwa sna;* T., P.: *yammi lik yañ;* U.: *yamka yañ*). When they take leave, the Miskito will say to each other *disabi*, contracted from *disabya* (for *yawan kli disabya* "we will speak again"), which corresponds to the Twahka *yulbûdarañ*. The Twahka will, however, more frequently make use of the general form of salutation *parasta* upon separating, whereas their kindred say *kaltaldarañ* (P.) and *kaltalwarañ* (U.), that is "we will see you again." 576

Upon Indians returning from a prolonged absence their female relations will sit down in a corner of the hut, throw a cloth over their head, and begin to cry with a dirgelike song.

RECEPTION OF VISITORS.—There are no communal houses for the reception of strangers; the latter are generally directed to the dwelling of the headman or sukya. Visitors arriving by canoe may give notice of their approach by blowing a conch shell. If a party of Indians arrive at a settlement where the men are absent they do not land unless they have near relations there, but they talk with the women from the canoe. 574

In former days the reception of a stranger or visitor appears to have been of a more demonstrative nature than now. Exquemelin (English edit.: 252), referring to the Miskito of Cabo Gracias a Dios, states that "the host goes a distance of three or four hundred steps out of his hut to receive his guests, and upon their approach he lies down flat upon his face without any motion, as if dead. The guest then lifts him up and together they go to the festival. Here the guests in turn lie down, and the master of the house lifts them up one by one and with his hand leads them into the cottage to a seat." This form has been out of use for many years. Nowadays the host does

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1: Conzemius M-4, 5 (1921) 1932
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514 not go out to encounter his visitor, but receives him with a handshake in his hut or at the doorway.

Among the Sumu (Twahka and Panamaka) I have observed occasionally that the guest walks into the house of his host without speaking a word. The latter then addresses him with the words *diwana man* "have you come?" to which the other replies *diwana yañ* "I have come." He is then motioned to one of the low wooden seats or to a hammock. The master of the house then calls his wife or daughter to bring him some wabul or other beverage or food. If the guest is well known to the women they will decry the drink or food offered, while the guest is supposed to praise it. If they do not know each other the wabul is brought without the exchange of a single word. The visitor is never questioned while he is eating, as that would be a breach of etiquette. When he has finished with the food the master of the house will inquire where he comes from and what brought him to his dwelling. He generally asks him also if he saw plenty of game on his journey and if the latter is lean or fat. When the visitor departs he merely says *yawa yañ* "I am going," and he goes, while the host replies, almost laconically, *yawa man* "are you going?"

201 Kissing.—Among these Indians kissing is absolutely unknown. They manifest their affection by merely smelling the scent of the other person, rubbing their nose against the latter's cheek with a snuffing action; this custom prevails in large areas of the world. Parents rub their nose against the face, neck, or body of their baby, inhaling the scent as in snuffing, but they never touch the child's skin with their lips. The words "to kiss" or "to smell" are translated by the same phrase (M.: *kia walaya;* T., P.: *waya dakanin;* U.: *wiñka dahnaka*), which literally means "to hear the scent." Among the Sumu (and the neighboring tribe of the Rama as well) our manner of kissing is abhorred and looked upon as a mild form of cannibalism.

TIME RECKONING

211 Pyu or Peruvian quipu.—Primitive forms of the complicated *quipu* of Peru are in existence among both Miskito and Sumu. They consist of a single cord with knots and are called *pyu* or *piu* (S.: *ma*), a word which is etymologically related to *quipu*. When the Indian departs for a voyage he gives his wife a string or cord with as many knots therein as the number of days he expects to be absent, each knot corresponding to a day. The woman severs one of these knots every night, and in this manner she knows at a glance at the *pyu* how many days her husband will still be absent, for the latter arrives, if well, on the very night on which the last knot is cut off. When

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2: Kirchhoff E-4 (no date) 1948
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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *lukpi yapti*, my child's mother, and *lukpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kaka*, grandmother. The common form of salutation is *naksa* and occasionally *nakki sma* (how are you?) The other replies *aiñsa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

1: Conzemius M-4, 5 (192[illegible]1932
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hours. During this time the quarrelers follow their usual occupation; from time to time they appear at the doorway in order to make themselves better heard. One tries to overtalk her adversary, picking out the weak points in the personal appearance, habits, and morals of the other. They, however, seldom come to blows. During this time the men remain passive onlookers, as they are not supposed to interfere in such quarrels. They will, nevertheless, attempt to persuade their wife to desist from the vulgar language and prepare the next meal.

Contact with foreigners is rapidly modifying the character of the Indians; it has made them less shy and easier to approach, and more hospitable, but on the other hand has made them more pretentious and less reliable and trustworthy. It has introduced begging among them, a practice which was formerly unknown. The more primitive Sumu even to this day will never ask a stranger for a present, and if the latter should offer them a leaf of tobacco or the like they will promptly give him some article of food in exchange. The Sumu, if unwilling to answer a question, will simply say *talnas-yaś*, "I do not know," or they will give an evasive answer, but the Miskito will frequently turn to a deliberate lie. The childish preference for anything foreign is also the result of contact with the white man.

The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

1: Conzemius M-4, 5 (1921) 1932
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628 These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

762 Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

674 There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

157 The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wáikna páin;* S.: *al yamni, al yamka*).

461 All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

157 Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

● 578 As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

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The hybrid Miskito differ greatly in character from the pure Indians, owing to their large admixture with Negro blood and their long association with foreign traders and settlers. They are rather noisy, bold, daring, adventurous, self-assertive, arrogant, and up to the present day they are prone to domineer over their more gentle and peaceable neighbors. In former days some of the Sumu, Paya, and Rama were subject to the "King" of the Miskito, to whom they had to pay a sort of tribute in the form of dugout canoes, cattle, and other articles. The ascendancy of the Miskito over the other tribes of the Mosquito Coast began about the latter part of the seventeenth century, after the former had become acquainted with the use of firearms through the agency of the buccaneers. The Miskito even undertook in the following years marauding expeditions to the coast of Costa Rica and Panama, in order to enslave the Indians and plunder the cacao plantations of the Spaniards.

PERSONAL NAMES

The members of the same family address each other generally according to age and sex as father, mother, husband, wife, son, daughter, elder brother, younger sister, etc. The infant does not receive any individual name until some peculiarity of appearance, manner, habit, or character has been observed.

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the Mosquito Coast make current use of these various "remedies," and that the Miskito women have the habit of mixing from time to time a small portion of their menstrual blood in the wabul for her husband, in order to keep the latter's affection.

PREMARRIAGE ORDEALS.—Before a young Sumu is allowed to have a wife he must give proof of his ability to shoulder the responsibilities of married life—that he is indeed a man. A council of the elder men of the village or district will investigate any complaint brought against the would-be bridegroom and he has to undergo certain ordeals. The latter consist of more or less rigid fasting, flogging, scarification, and the like. If he cries out or merely moans he will have to submit to the ordeal on a future occasion. The candidate for marriage bends down his bare back, whereupon all the married men punch him as hard as they can with their elbow. He endures the pain without a groan, for the women are there as spectators of his powers of endurance. If he is unpopular he may receive a severe beating, and occasionally accidents arise in this manner. Then an elderly man beats him with a whip made from tapir hide, consisting of two strings twisted like a rope, and having about 1 inch diameter. A young man is not considered worthy of a wife unless he is able to endure this ordeal with fortitude. If he has stolidly endured all these pains he is allowed to marry. He makes a canoe, bows and arrows, and other weapons, and he brings game and firewood to his fiancée. He also prepares the plantation for his prospective wife in order to prove that he is able to perform the duties of a future family head.

MARRIAGE TABOOS.—The children of two brothers or of two sisters are considered real brothers and sisters and they are not allowed to marry each other. The ban against the marriage of these cousins probably owes its origin to the fact that such children were often really half brothers and half sisters. Upon the death of his wife a man generally married her sister; similarly, if a woman had lost her husband, she was taken in marriage by her brother-in-law. For that reason the names for stepfather and father's brother, on the one hand, and for stepmother and mother's sister are identical in most of the dialects spoken on the Mosquito Coast. On the other hand, the children of brother and sister are not considered blood relatives, and a union between such cousins is the common, and originally perhaps the only, marriage allowed. Unions of this kind are still encouraged to this day, for it is felt that family ties are strengthened thereby.

Marriage between an Indian and a near relative of his *libra* or "covenant friend," and his *lapya* or "birth friend" is also banned, although such connections are not blood relations (M.: *taya;* T.: *möh;* P.: *wandih;* U.: *wanih*).

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him.

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements.

COURTSHIP.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yamni kŭlkaya sŭlka;* T.: *yamni talnin pananbas;* U.: *yamka talnaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *misbara kŭlkaya sŭlka;* T.: *ba talnin pananbas;* P.: *ma isikni talanin pananibas;* U.: *di dutka talnaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of

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844 SECLUSION AT CHILDBIRTH.—The prospective Miskito mother occupies a small hut (*dóúkon watla*), built for her by her husband in the bush, at a short distance from her home, just as she does during the menstrual period. She remains there about two weeks, accompanied by a female relation or friend. She has to observe similar regulations as at the menses, for she is considered impure and may pollute the house and contaminate the other inmates. She is particularly exposed to attack from snakes, beasts, and supernatural beings, and neither she nor her child must be seen by the sukya. She must also abstain from certain food, not only on account of her own well-being, but also on that of the community as a whole. The Sumu woman, however, accouches in a corner of the hut, which has been screened off either with bark cloth or with thatch.

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1: Conzemius M-4, 5 (1921) 1932
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Prostitution.—Prostitution is now met with among the Miskito inhabiting such settlements as have a large percentage of foreigners or Ladinos, but this has never been a recognized institution as among the more civilized tribes of Mexico and Central America. 548

Polygamy.—Polygamy exists, but it is not very common, and is generally limited to men of rank, as sorcerers. I have known Indians with 4 and even 5 or 6 wives, who all lived under the same roof. Each one of the women had her own hearth and cooking utensils and she prepared the food for herself and her children. The husband ate wherever he preferred. When he wished to buy something for his favorite wife he must treat the others alike in order to avoid scenes of jealousy which, it must be said, are very rare. The women have rarely a dispute with each other; sometimes they are all sisters, the oldest one, however, being generally the mistress of the house. They call each other *lahma* (M.) or *kaltiñ* (S.). Sometimes an Indian with wife and children may adopt a young orphan girl with the intention of making her his wife when she arrives at puberty. 595

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595 last-named author (b: IV, 279) states that the Miskito have only one wife. Dampier (I, 9) and Jeffery (45) likewise state that the Miskito marry but one wife with whom they live until death separates them.

586 DIVORCE.—Occasionally husband and wife separate by mutual consent, the children remaining in charge of the mother. A woman is generally abandoned by her husband if she does not give birth to any children. The young husband does not remain at the hut of his parents-in-law when he is sick, but returns home to undergo treatment; in case his disease is incurable, or if he is lazy or cruel, he may not be admitted again at the house of his parents-in-law, and the marriage is then considered dissolved. The husband has, however, the right to claim payment for all the presents he has made to his wife or to her family.

587 REMARRIAGE.—If a widow wishes to remarry she must be bought from the heirs, that is, the relations of her dead husband. Such a payment is known as "widow money" (M.: *pyarka mana;* T., P.: *tiāmak minit;* U.: *pyarka makalnak*). The widow is considered the property of her husband and with the death of the latter passes to his relations.

In no case is a widow allowed to remarry until the festival of the dead (M.: *sikro, sikro;* S.: *sdū*) has taken place, which is about one year after the death of her husband. In case the future husband agrees to have this festival celebrated at his own expense, he need not pay anything else for the widow. The author who wrote about 1699 under the initials M. W. (309) was evidently mistaken in stating that among the Miskito the widow was allowed to remarry three days after the death of her husband. According to Exquemelin (Engl. edit.: 254), who wrote about the same period, this action could not take place until two years later.

CHILDREN: THEIR BIRTH AND EDUCATION

844 SECLUSION AT CHILDBIRTH.—The prospective Miskito mother occupies a small hut (*dāūkan watla*), built for her by her husband in the bush, at a short distance from her home, just as she does during the menstrual period. She remains there about two weeks, accompanied by a female relation or friend. She has to observe similar regulations as at the menses, for she is considered impure and may pollute the house and contaminate the other inmates. She is particularly exposed to attack from snakes, beasts, and supernatural beings, and neither she nor her child must be seen by the sukya. She must also abstain from certain food, not only on account of her own well-being, but also on that of the community as a whole. The Sumu woman, however, accouches in a corner of the hut, which has been screened off either with bark cloth or with thatch.

2: Kirchhoff E-4 (no date) 1948
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551 177 These old Indian names have now practically been superseded by Spanish or English names. On the coast English names seem to be preferred, but in the interior nearly all the names are taken from the Spanish language. The Indian generally takes only one name, which may be either a Christian name or a surname; from time to time they change it. A well-known Miskito of Rio Patuca, the owner of many cattle, even took the name "Honduras."

Foreigners traveling on the Mosquito Coast are frequently asked by the Indians to name their youngest child. It is often difficult to find a name which is acceptable to them, as they do not want any which is already found in the region. M. W. (304) tells us that at the end of the seventeenth century the most prominent Miskito all had names given to them by the buccaneers; every one of the adventurers stopping at the coast was asked to give a name to one of the Indians, and the latter thought that the same buccaneer could not well give a name to more than one Indian.

551 The mentioning of a deceased person's name is taboo among all the tribes under consideration, and it is a direct insult to mention it in the presence of his relatives.

551 177 But at no time does the Indian like to be addressed directly by his name. It is therefore often difficult to find out their real name, especially of the women, who are generally known as So-and-so's wife, daughter, mother, sister, etc. In former days this was the case with the men, too, but owing to their working in the mahogany camps, gold mines, and other enterprises, where they had to give their name in order to be distinguished from the other laborers, this aversion has gradually disappeared. While in charge of a mahogany camp on Rio Coco I had great difficulty at first in obtaining the names of new laborers, especially of the Sumu. They would invariably tell me that they were the son of So-and-so, or they gave me the name of the village they hailed from. However, if there were other Indians present one of the latter would promptly answer my question by telling me the name of the particular Indian I had addressed.

●601 The series of relationship words, by which the members of a family address each other instead of proper names, is very complicated among the Miskito, and may be replaced by a whole new series when a death occurs in the family. Husband and wife call each other *mayi* "my consort." Before any child has been born to them the husband often calls his wife *kika* "girl," while she calls him *wahma* "young man." After the birth of the first child they often call each other *luhpi yapti* "my child's mother," and *luhpi aisa* "my child's father," respectively. After the death of a child they apply to one another the name *sukrika*. The words *mahma* or *masa* are frequently used to address a son or brother, while *kika* or *misis* are the forms of address for daughter or sister.

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Old men and women should always be addressed as *dama* "grandfather" and *kuka* "grandmother" among the Miskito, the use of their personal names in talking to them being considered very irreverent. 601

Two men or two women may exchange their names, or merely some sort of personal property, in form of friendship, as a pledge of perpetual amity; they then call each other *libra*. This habit is common among the Miskito and is also found occasionally among the Sumu. Such friends are as dear to each other as brothers, and an Indian may trust his wife with perfect safety with his *libra*. 572

SALUTATIONS

COMMON FORM OF SALUTATION.—Handshaking (M.: *mihta sibaya;* T., P.: *tiñ isihnin;* U.: *tiñ isihnika*) constitutes now the general form of salutation, but this habit seems to be of foreign introduction. When two Indians meet the one will say: "How are you?" (M.: *naksa*, abbreviated from *nakki sma;* T., P.: *parasta;* U.: *yampara*), while the other replies: "I am well" (M.: *dilkwa sna;* T., P.: *yammi lik yañ;* U.: *yamka yañ*). When they take leave, the Miskito will say to each other *disabi*, contracted from *disabya* (for *yawan kli disabya* "we will speak again"), which corresponds to the Twahka *yulbaldarañ*. The Twahka will, however, more frequently make use of the general form of salutation *parasta* upon separating, whereas their kindred say *kaltaldarañ* (P.) and *kaltalwarañ* (U.), that is "we will see you again." 576

Upon Indians returning from a prolonged absence their female relations will sit down in a corner of the hut, throw a cloth over their head, and begin to cry with a dirgelike song.

RECEPTION OF VISITORS.—There are no communal houses for the reception of strangers; the latter are generally directed to the dwelling of the headman or sukya. Visitors arriving by canoe may give notice of their approach by blowing a conch shell. If a party of Indians arrive at a settlement where the men are absent they do not land unless they have near relations there, but they talk with the women from the canoe. 574

In former days the reception of a stranger or visitor appears to have been of a more demonstrative nature than now. Exquemelin (English edit.: 252), referring to the Miskito of Cabo Gracias a Dios, states that "the host goes a distance of three or four hundred steps out of his hut to receive his guests, and upon their approach he lies down flat upon his face without any motion, as if dead. The guest then lifts him up and together they go to the festival. Here the guests in turn lie down, and the master of the house lifts them up one by one and with his hand leads them into the cottage to a seat." This form has been out of use for many years. Nowadays the host does

3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *luka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

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This custom appears to exist among all the Sumu subtribes; it is also found among the Miskito of the upper Rio Coco, who are largely mixed with the Sumu, but it has not been observed in other parts of the Mosquito Coast. The origin of this custom is somewhat obscure, and I was unable to obtain from the Indians any satisfactory explanation regarding it. The usual answer is that they observe it because it has been handed down to them by their ancestors. According to Grossmann (b: 4), each mother stands under the special protection of the tapir, who is angry at the man who has robbed her of her daughter, and only refrains from punishing him on condition that he never looks on her. Therefore the man who has looked on his mother-in-law is fated to meet his death from the enraged tapir, unless absolved by making a payment to the wronged woman.

In former days the same taboo existed among the Miskito between a man and his sister-in-law, the wife of his birth friend (*lapya*) and the wife of his covenant friend (*libra*); or between a woman and her brother-in-law, and the husbands of both her *lapya* and *libra*.

841 MENSTRUAL SECLUSION.—During the menstrual periods (M.: *mairin siknis* "woman sickness," *kati siknis* "monthly sickness"; S.: *tiñ dutni, tiñ dutka* "bad hand") the woman is considered unclean and she is shunned by her husband. She must not touch any food intended for other people, otherwise the latter may die. Formerly the young girl had to undergo certain puberty ordeals at the first menstrual period, but I was unable to obtain any details relating thereto.

When the Miskito woman is inconvenienced in the accustomed manner, she occupies a small temporary hut (M.: *tala watla* "blood house") built by her husband at a few hundred yards from the settlement. She remains there a couple of days. At night one of the other women joins her to keep her company, but to all the men, her husband included, the hut is taboo. While in this state of impurity the woman must not be seen by a sukya, for that would weaken the latter's connection with the spirits, and perhaps even cause his

1: Conzemius M-4, 5 (1921) 1932
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DELIVERY.—Only females are present at childbirth, the elder or more experienced ones acting as midwives. The methods employed to hasten delivery are in general very brutal, and they lead occasionally to the death of both mother and child. One of the befriended persons present severs the navel string with the aid of a sharpened piece of bamboo or a wood splinter, and then ties it with a cotton thread. In virtue of this act she will henceforth be considered as a blood relation to the newborn child and the latter's parents as well, and they call each other reciprocally *lapya* or *lahpya*. This corresponds loosely to the *compadre* and *comadre* system of the Ladinos. The *lapya* appears to have been limited in former days to the Miskito, but lately it has spread to the other tribes of the Mosquito Coast—Sumu, Rama, and Paya. The afterbirth is buried by one of the women as soon as it is expelled. The same is also done with the umbilical cord, in order to prevent pigs, dogs, or other animals from eating it up, which may result in sickness or death for the baby.

COUVADE.—Traces of the couvade may be observed among both Miskito and Sumu. During the first days of the newborn child the father will refrain from hard work and keep out of the bush. He will also abstain from certain foods and from salt and chili pepper. The mother also has to keep a diet. Exquemelin (Engl. edit.: 253) denies the existence of the couvade among the Miskito, but the actual facts have probably escaped his observation. This author states that the mother bathes her baby at the next river, wraps it up in a *calalas* (=*kwala* "cloth") and then follows her usual occupation. According to my various informants the bath of the mother and the child is postponed until the third day after delivery. But the mother is considered impure for from one to two weeks longer. After that period has elapsed she may return to her husband, who prepares a feast with food and drink in honor of the baby and the *lapya*.

BIRTHMARKS.—Birthmarks (M. and S.: *wasaki*) are ascribed by both tribes to the failure of the mother to obtain during pregnancy a certain article of food for which she had a vehement desire. The Indians supply, if possible, a woman *enciente* with any kind of food for which she may ask. If during that state she should have a craving for a slice of pineapple the husband will do his utmost to procure the fruit. Should the prospective mother learn that it is impossible to obtain it, and then thoughtlessly pass her hand over her head, breast, or arm, the child would be born in due time with the mark of a pineapple at the corresponding part of the body. A somewhat similar belief exists among the ignorant people in large areas in Europe.

A certain skin disease is found sometimes on the newly born child, and is known among the Miskito by the name *dus arbira* "gnawing of trees." Its origin is traced to the fact that the mother, while *enciente*,

1: Conzemius M-4, 5 (1921) 1932
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In the legends of the Miskito there are records of individuals seizing the powers of government by violence. The insignia peculiar to a chieftainship seemed to consist of a wooden scepter and of a metal breastplate depending from the neck. The powers of the numerous priest-doctors (*sukya*) were also very great, but it is not known just how much they intervened in governmental affairs. It appears, however, that occasionally the temporal and spiritual heads were both centered in the same person.

Hereditary chiefs did not rule the Mosquito Coast until after the establishment of British influence. One of these chiefs, a Miskito, was later raised to the rank of king; he became a tool in the hands of his foreign protectors, with whose aid his nominal authority was extended over the larger part of the coast. A silver crown and a scepter of little intrinsic value were bestowed upon him by the British authorities of Jamaica. The rule of the Miskito "king" was absolutely despotic. His orders were carried out by his quartermasters (*kwatmas*); the latter carried a cane or staff, which symbol of authority was apparently introduced by the English or Spaniards. A silver medal, sword, or anything else known to belong to the king would also do. Such a token established the credibility of the bearer and an immediate compliance with his orders. Foreign traders also applied to the king for such an object which served as a passport; every Indian was compelled to render him assistance, lodge him, sell him food, and furnish him with the means of continuing his journey, against reasonable pay. That the Indians of the interior did not pay much attention to such commands need hardly be told.

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2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Harpoons with floats attached are used for large fish and for manatees, 226
the latter being taken in the lagoons and at sea. Harpoons with long 225
retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are 231
now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. 252
Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plan- 272
tains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs 273
(*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat 251
is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. [21]
Sumo villages appear to have been much smaller. Formerly, communal 342
houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

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[671]

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Both the *Paya* and the *Northern Sumo* occasionally use elaborately carved metates and well-made manos obtained at ancient ruins. The *Mosquito* made large wooden mortars and single-ended or, more rarely, double-ended pestles.

Tools used for working wood and for fashioning many miscellaneous articles were: Scrapers made of fish teeth, turtle shells, or stone and knives made of split bamboo. Three-legged wooden stools were formerly richly carved, often having a bird or animal head. Spoons, ladles, cradles, and the like are also made of wood. Gourds are often engraved with simple geometrical designs (pl. 36, *bottom*).

Weapons.—*Mosquito*, *Sumo*, and *Jicaque* bows are 4 to 5 feet (1.3 to 1.6 m.) long, *Paya* specimens 6 feet (2 m.) long. They taper toward the ends and are rectangular in cross section. Killing arrows have a cane shaft and palm-wood foreshaft. Points of flint, obsidian, turtle shell, fishbone, and shark and alligator teeth were being replaced by iron ones as early as 1678 (Exquemelin, 1678). Arrows are not feathered. According to Exquemelin, the arrows used about the Laguna de Bluefields (*Kukra*) were 6 to 8 feet (2 to 2.6 m.) long with a flint tip and a wooden hook (possibly some type of barb?). Some arrows were weighted with pebbles. Stunning arrows have blunt knobs made of hard wood or beeswax.

The *Ulva* and *Paya* make blowguns, possibly only toys, from a reed 18 inches (45 cm.) long. These shoot wax pellets. The blowgun is, even among Hispanicized *Jicaque*, an effective weapon. It is bored from a branch of a certain tree, and clay pellets are carefully made by means of a gage (Von Hagen, 1943, pp. 50–52). The *Mosquito* and *Sumo* probably used the blowgun, but present information is not precise.

Arrow poison has been reported from some *Mosquito* tribes. Bancroft says that this was made from the juice of *Hippomane mancinella*. Conzemius did not observe this tree in the territory but mentions the possibility that the secretions from a frog (*Dendrobates tinctorius*) may have been used. The former poison is used by the *Carib*, and both types are used by the *Cuna* and *Choco*.

POLITICAL ORGANIZATION

Little is known of the aboriginal organization of these tribes. Both chiefs and shamans had great power. Local governments now control the villages, but during the Conquest these tribes were organized for war in various ways. Chiefs were elected by the elderly men and their power was supreme. The office was not hereditary, but among the *Mosquito* a nephew or son-in-law of a chief might succeed him. The whole *Mosquito* tribe, under British guidance, was united and ruled by a "king" who carried as insignia a staff and a gold or silver breastplate.

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624 chiefs, called by the Miskito name *wita* or *wihta* (lit.: "head"), resided in the larger villages.

648 Now the government of the two republics, Honduras and Nicaragua, is represented by *comandantes*, who are invariably Ladinos. Indian *subcomandantes* are occasionally named in the larger areas, but their authority is practically insignificant. Some deference is also paid by the Indians to the elders of the settlements, and especially to the sukya. The officials despatched from Tegucigalpa or Managua are rarely of the better element, and have at times committed great abuses among the timid and peaceful aborigines. They are too frequently men of low morals who try to enrich themselves by imposing fines upon the Indians, which are put into their own pocket, or by compelling the natives to work for their personal benefit.

LAWS: CRIME AND ITS PUNISHMENT

627 ADMINISTRATION OF JUSTICE.—In former days the punishment of criminals was intrusted to the individual wronged rather than to special officers of justice. If the injured person did not take any steps to revenge himself he was considered a coward.

177 692 681 Toward the middle of the eighteenth century, when British influence spread to the "court" of the principal Miskito chief, special officers, known by the name *kwatmas* (from the English "quartermaster") were intrusted with the execution of government orders and the administration of justice. Punishment was inflicted in the shape of fines, flogging, and death by hanging; prisons were unknown. On their periodical visits these officers used to whip all the young people whom they could seize, in order to cure them of their laziness and stinginess, apparently whether they were guilty of the charge or not. This was called "teaching the people" (M.: *upla smalkaya;* S.: *môih sumalnia, môih sumalnaka*) and had the object of inculcating principles of good conduct and morality. An account of such proceedings is given by Bell (b: 278–282).

685 THEFT.—A thief was compelled according to Indian law to restore twice the value of the stolen object.

847 INFANTICIDE.—This was apparently not considered a crime in former days under certain circumstances. (See Children: Their Birth and Education.)

683 BODILY INJURY.—For any bodily injury, whether done intentionally or not, a payment of "blood money" (M.: *tala mana;* T., P.: *a minit;* U.: *awas makalnak*) was collected.

682 MURDER.—A murderer had to follow his victim into death. If he should not do so voluntarily, the relations of the murdered man might kill him without risk of punishment; besides, in that case, his memory would be dishonored. The *lex talionis* was applied rigidly.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

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The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government education is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The Indians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *luska*, grandmother. The common form of salutation is *naksa* and occasionally *nakki ama* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

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The men taking part at the *asaŭ ldiwana* had the whole body painted black and wore nothing but the loin cloth. They had to be ceremonially "pure" (*sunu*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *pupuh* (maize liquor), for every one was afraid of him.

At the *asaŭ ldiwana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŭ al yaŭ*, "I am a man," whereupon his adversary replies *yaŭ bik al yaŭ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

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LAWS: CRIME AND ITS PUNISHMENT

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2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among the *Mosquito* and *Sumo* a man who has been wronged is considered a coward if he does not avenge himself. If revenge fails, both the offended man and the perpetrator of the offense are supposed to commit suicide. A thief, when caught, must return double the amount stolen. A creditor may help himself to his debtor's property, or he may destroy the property of a third person, in which case the debtor must pay the damage (*Mosquito*). An adulterous wife is beaten and forced to reveal the name of her lover, who is fined. A murderer is killed, unless he commits suicide, and his memory is dishonored. There is, however, no dishonor in poisoning an enemy, the method employed for most murders.

SOCIAL ORGANIZATION

A man and woman may agree to marry, or, more rarely, the girl's parents may make marriage arrangements without her consent. Child betrothals are common. Cross-cousin marriage is frequent, but marriage between parallel-cousins and closer relations is forbidden. *Mosquito* and *Sumo* chiefs and shamans have several wives, and the *Paya* of Río Platano and Río Paulaya practice polygyny, as do the *Jicaque*.

Before marriage a man must pass through various ordeals, pay the bride's family an agreed sum, and prepare a field for his prospective wife. The wedding is a simple ceremony. The levirate and sororate are practiced, and the many possible exceptions to this rule are adjusted by payments. A man may abandon his wife if she is barren. Divorce is accomplished by means of payments to the families of offended parties. The woman always keeps the children. Among numerous relationship taboos are the important mother-in-law taboo and the prohibition on a man's speaking to his sister-in-law and to other close female relatives by marriage.

LIFE CYCLE

Childbirth.—The *Paya* and *Mosquito* build special confinement huts; the *Sumo* partition off a corner of the house. During parturition the mother is aided by another woman who cuts the cord with a piece of bamboo. The afterbirth and umbilical cord are buried. Among the *Paya* a midwife is regarded by parents and child as a blood relative. This belief is said to have originated among the *Mosquito* and diffused to the *Sumo* and *Paya*. The second of twins and deformed children are killed (*Mosquito* and *Sumo*). Some female children were killed at birth.

Sumo and *Mosquito* women bathe immediately after bearing a child, *Paya* women on the third day. *Sumo* women take a steam bath but use no special structure; in other tribes they bathe in the river. This bath ends a period of ritual impurity. *Mosquito* women, however, are considered impure for one or two weeks. Women also observe a special diet. The return of the mother to the house is celebrated with a ceremony.

1: Conzemius M-4, 5 (1921) 1932
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Poisoning is nowadays the usual method of disposing of an enemy. The poison is administered in rum or fermented drinks, with the aid of a third person, when the intended victim is intoxicated. This method of killing has been rather common in recent years. As poison the Indian uses some strong native drugs, alligator gall, or even cyanide stolen from the gold mines. The Miskito from Rio Coco are supposed to make frequent use of poison. If the Indian kills his enemy with the aid of a gun, arrow, or knife, he will have to follow him into death, but such does not appear to be the case when poison has been administered.

ADULTERY.—Morality is at a low ebb, particularly among the Miskito, and most of the disputes and crimes that occasionally take place are the results of quarrels about women. The injured husband inflicts a severe beating on his unfaithful wife or attempts to choke or drown her in order to make her tell the name of the other delinquent, from whom a payment (M.: *mifirin mana;* T., P.: *yal minit;* U.: *yal makalnak*) is exacted. Such a "woman payment" consists generally of a cow or a gun. Otherwise wife beating is not common. Occasionally a woman has committed suicide for having received a sound beating from her husband on account of her unfaithfulness, and the latter was then compelled to pay up to her relatives. Bell (a: 251) states that he had known men keeping wives for the sole purpose of the revenue derived from their misconduct.

DEBT.—If a debtor refuses to pay up or to return or refund the object or money borrowed, the creditor might go to his plantation and pay himself with provisions without risk of punishment. If such a debt can not be collected in an amiable way, the creditor, instead of wrangling with the debtor, might destroy some property belonging to a third person. Pressure is then brought to bear upon the debtor and he has to make good the damage done.

VARIOUS.—Sometimes an Indian who had been grossly insulted and was unable to collect payment would commit suicide, whereupon the offender had to do the same. This system led to complicated cases, and the following has been recorded by the Moravian missionaries. A Miskito woman, being continually mistreated by her husband, ran away from him. The latter then proceeded to the house of his parents-in-law, where he was told that his wife, unable to endure his barbarous treatment any longer, had hung herself. The man understood what that meant and committed suicide without hesitation. Then the woman, whom every one had believed dead, returned to the village. But now the relations of her husband wanted her to commit suicide also for having caused the latter's death by her flight from home. As the unfortunate woman hesitated, not having the courage to do what was asked of her, her husband's relations seized her and hung her to the nearest tree.

1: Conzemius M-4, 5 (1921) 1932
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628 These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

762 Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

674 There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

157 The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *waikna pain*; S.: *al yamni, al yamka*).

461 All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

157 Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

578 As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

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GOVERNMENT AND SOCIAL ORGANIZATION

There is no trace of any division in clans or exogamic kinship groups. The tribal organization of these primitive tribes was essentially along democratic lines.

In former days the Miskito do not appear to have been ruled by a supreme chief, except during war time, when a commander was chosen by an assembly of the old men, in order to direct the military operations (M. W.: 307). The choice fell generally upon a warrior celebrated for his prowess. According to Exquemelin (French edit.: II, 264) preference was given to an Indian who had accompanied the buccaneers, but with the restoration of peace his authority ceased.

In the legends of the Miskito there are records of individuals seizing the powers of government by violence. The insignia peculiar to a chieftainship seemed to consist of a wooden scepter and of a metal breastplate depending from the neck. The powers of the numerous priest-doctors (*sukya*) were also very great, but it is not known just how much they intervened in governmental affairs. It appears, however, that occasionally the temporal and spiritual heads were both centered in the same person.

Hereditary chiefs did not rule the Mosquito Coast until after the establishment of British influence. One of these chiefs, a Miskito, was later raised to the rank of king; he became a tool in the hands of his foreign protectors, with whose aid his nominal authority was extended over the larger part of the coast. A silver crown and a scepter of little intrinsic value were bestowed upon him by the British authorities of Jamaica. The rule of the Miskito "king" was absolutely despotic. His orders were carried out by his quartermasters (*kwaimas*); the latter carried a cane or staff, which symbol of authority was apparently introduced by the English or Spaniards. A silver medal, sword, or anything else known to belong to the king would also do. Such a token established the credibility of the bearer and an immediate compliance with his orders. Foreign traders also applied to the king for such an object which served as a passport; every Indian was compelled to render him assistance, lodge him, sell him food, and furnish him with the means of continuing his journey, against reasonable pay. That the Indians of the interior did not pay much attention to such commands need hardly be told.

Besides the king, there were three other important rulers among the Miskito, who governed comparatively large areas and were known as "general," "governor," and "admiral." Numerous minor

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found in the works of the historians Juarros, León Fernández, R. Fernández Guardia, Ayón, Gámez, and Vallejo.[85]

In 1722 Spain protested to the British authorities of Jamaica on account of these slaving expeditions, alleging that the Miskito had captured in the valley of Rio Matina and on Tojares Island (Chiriqui Lagoon) over 2,000 Indians (Talamancas, Viceitas, Arinamaes, Abubaes) and sold them to Jamaican traders for arms and ammunition. On October 8, 1722, Diego de la Haya, Governor of Costa Rica, addressed a note to the authorities of Jamaica for the restitution of these Indians. (Peralta, a: 20–31; Fernández: IX, 153.)

The Sumu apparently did not enslave their prisoners, but killed them outright. Scalping was unknown, but the teeth and nails were extracted from the unhappy victims and carried round the neck as trophies. Certain subtribes of the Sumu were cannibals and roasted the enemies captured in war.

ALLIANCE OF THE MISKITO WITH THE BUCCANEERS.—During the seventeenth century the buccaneers, who were active in the Caribbean Sea preying upon the commerce of Spain, entered into friendly and commercial relations with the Miskito, who likewise were the enemies of the Spaniards. According to Exquemelin the first buccaneer vessel anchoring at Cabo Gracias a Dios was French. The captain was well received and made a few presents to the Indians, who in turn gave him products from their fields. When he left he carried along two of these Indians in order to provide his vessel with food, having observed their great skill in fishing. The two Indians were well treated; they learned French, and after one or two years were carried back home again. From that time the French and the Miskito became friends. Indian women were given to the former during their stay at Cabo Gracias a Dios and in payment the buccaneers gave iron tools. They had no trouble in being supplied with Indian fishermen when they left for a cruise, and some of them even picked up the Miskito language. The French made the English acquainted with their new friends. Many Indians served three or four years on the vessels of the buccaneers, learning either French or English, and then were paid off in iron tools (Exquemelin, Engl. ed.: 250; French ed.: II, 262–264).

It would appear, however, that later the English buccaneers were more esteemed than the French. Dampier (I, 8) states that the Indians "like the English but do not love the French," while according to Sloane (a: I, p. LXXVIII) the Miskito "do not allow any other nation but the English to settle among them and that they have

[85] See also Gaceta oficial de Costa Rica, 1864; A. von Frantzius, Archiv für Anthropologie, IV, 1870, p. 104; Thiel, Datos cronológicos para la historia eclesiástica de Costa Rica San José, under 1693; Restrepo, Viajes de L. Wafer, Bogotá, 1853, p. 110.

1: Conzemius M-4, 5 (1921) 1932
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some propensity to the Dutch, but hate the French mortally for their wanton behavior toward their wives." The statements of these two English authors should, perhaps, be accepted with reserve.

The Miskito were of valuable assistance to the buccaneers, for they were, and still are, singularly skillful with the spear. When a party of buccaneers put to sea without provisions they steered to the feeding grounds of the sea turtle or they stopped at a lagoon where the manatee was to be found. Here two Indians set out in their own small canoe. Two Miskito were able to catch enough fish, manatee, or turtle to supply a vessel of 100 men. For that reason they were much esteemed by the buccaneers and nearly every vessel from Jamaica had a couple of these Indians on board (Exquemelin, English ed.: 250; Dampier: I, 1–2, 35–37, 160, 181, 234, 277, 453, and II, part II, 13, 109; Raveneau de Lussan: 440).[82]

The Miskito were not only used as fishermen by the buccaneers but they also bore arms. They were bold and courageous in the fight and they shared in the capture. Among these sea rovers the Indians became first acquainted with the use of firearms and soon proved very good marksmen (Dampier: I, 2, 8). Miskito strikers even accompanied the buccaneers in the Pacific Ocean. In January, 1681, a party of English freebooters under Sharp and Watling were anchoring at the island of Juan Fernandez in the southern Pacific, about 400 miles west of Chile. Being persecuted by three Spanish vessels they hurriedly lifted anchor and sailed away, leaving behind a Miskito named William, who was hunting in the bush at the time. This Indian lived a solitary life on the island for three years when finally he was rescued by another party of English buccaneers under Cook. The first man from the rescuing vessel jumping on land was likewise a Miskito, named Robin. Dampier belonged to the party and relates the account (I, 84–86).[83]

MARAUDING EXPEDITIONS TO THE SPANISH SETTLEMENTS.—Led by their allies, the buccaneers, the Miskito also formerly undertook incursions in the interior of Honduras and Nicaragua by ascending the larger rivers. They surprised and plundered the nearest Spanish settlements, capturing the women and children. During the eighteenth century the towns Catacamas, Juticalpa, Segovia (now Ocotal), Jinotega, Matagalpa, and some settlements of Chontales were several times entirely destroyed and some of them were then

[82] Vide also Basil Ringrose, The History of the Bucaniers of America. Part II. The dangerous voyage and bold attempts of Capt. Barth. Charp, Watlin, Sawkins, Coxon, and others, in the South Sea. London, 1699, chap. XI, p. 54.

[83] See also Ringrose, *ubi supra*, chap. XV. The Scotch sailor, Alexander Selkirk, whose adventures suggested to Daniel Defoe his famous work Robinson Crusoe, was therefore not the first or the only inhabitant of Juan Fernandez; the latter lived there from 1704 to 1709.

1: Conzemius M-4, 5 (1921) 1932
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transplanted some distance away from the navigable rivers in order to be less exposed to attack (M. W.: 300, 302, 306; Peláez: II, 165; Peralta, b: 102, 120; Belt: 241, 255–256). In those days the products of Nicaragua were generally shipped by way of Rio San Juan, but this important waterway was often in the hands of the Indians.

Attacks by the Miskito on the Spanish settlements were also carried on occasionally as far north as Rio Chamelecón in Honduras; sometimes these Indians joined the English logwood cutters operating in what since has become British Honduras.

More frequently the canoes of the Miskito were directed southward toward Rio Matina in Costa Rica, where the Spaniards had established important cacao plantations during the seventeenth century. The latter had to be abandoned later, owing to the incursions of the Indians. The historians of Costa Rica devote large space to these expeditions into their territory. (See also M. W.: 302, 307, 310.) Although they ceased gradually during the latter part of the eighteenth century, acts of authority were exercised by the Miskito on that coast for some time afterwards. Still in 1838 they monopolized the fishery of the hawk's-bill turtle as far as Puerto Limón, collecting a tribute from the fishers engaged in that occupation (Cooper: 12).

THE MISKITO IN THE JAMAICAN MAROON WAR.—The Miskito rendered very valuable service to the English of Jamaica in aiding to suppress the maroon rebellion on that island. These maroons were the descendants of the Negroes and mulattoes who took to the mountains, in order to preserve their freedom, when the English in 1655 wrested Jamaica from the Spaniards.

On June 25, 1720, a convention was signed between Sir Nicholas Lawes, Governor of Jamaica, and Jeremy (Jeremias), "King" of the Miskito, whereby the latter engaged himself to send a body of Indians to track the revolted slaves. This treaty was formally agreed to and passed upon by the Assembly of Jamaica.

Two hundred Indians were brought to Port Royal and organized in companies under their own officers. They were paid 40 shillings a month and a pair of shoes. They remained several months and rendered valuable services to the English. A few years later the maroons were active again and about 1725 Capt. Robert Lade brought 100 "Muschetos" Indians to Jamaica to fight them (Lade: II, 7, etc.).

Again, in 1738, 200 Miskito were brought for the same purpose. They were formed into companies under their own leaders with white guides assigned to each company, who were to lead them to the enemy. They did good service as trackers and with their assistance the maroons were soon pressed on all sides, cut off from their provision grounds, and compelled to make peace (Long: II, 344–345; Edwards: I, 529–530).

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3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 624 There is no trace of any division in clans or exogamic kinship groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would chose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kwatmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

● 648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government education is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The Indians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

[871] [564]

674 626 Within the villages themselves government takes place with the elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

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These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wáikna pán;* S.: *al yamni, al yamka*).

All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

3: Pijoan D-5 (ca. 1945) 1946
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304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 624 There is no trace of any division in clans or exogamic kinship groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would chose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kwatmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government education [871] is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The In- [554] dians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

674 626 Within the villages themselves government takes place with the elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

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In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

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The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *lukpi yapti*, my child's mother, and *lukpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nahki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

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2: Kirchhoff E-4 (no date) 1948
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Among the *Mosquito* and *Sumo* a man who has been wronged is considered a coward if he does not avenge himself. If revenge fails, both the offended man and the perpetrator of the offense are supposed to commit suicide. A thief, when caught, must return double the amount stolen. A creditor may help himself to his debtor's property, or he may destroy the property of a third person, in which case the debtor must pay the damage (*Mosquito*). An adulterous wife is beaten and forced to reveal the name of her lover, who is fined. A murderer is killed, unless he commits suicide, and his memory is dishonored. There is, however, no dishonor in poisoning an enemy, the method employed for most murders.

627 681

SOCIAL ORGANIZATION

A man and woman may agree to marry, or, more rarely, the girl's parents may make marriage arrangements without her consent. Child betrothals are common. Cross-cousin marriage is frequent, but marriage between parallel-cousins and closer relations is forbidden. *Mosquito* and *Sumo* chiefs and shamans have several wives, and the *Paya* of Río Platano and Río Paulaya practice polygyny, as do the *Jicaque*.

582 [595]

Before marriage a man must pass through various ordeals, pay the bride's family an agreed sum, and prepare a field for his prospective wife. The wedding is a simple ceremony. The levirate and sororate are practiced, and the many possible exceptions to this rule are adjusted by payments. A man may abandon his wife if she is barren. Divorce is accomplished by means of payments to the families of offended parties. The woman always keeps the children. Among numerous relationship taboos are the important mother-in-law taboo and the prohibition on a man's speaking to his sister-in-law and to other close female relatives by marriage.

583 [587] [586] 602

LIFE CYCLE

Childbirth.—The *Paya* and *Mosquito* build special confinement huts; the *Sumo* partition off a corner of the house. During parturition the mother is aided by another woman who cuts the cord with a piece of bamboo. The afterbirth and umbilical cord are buried. Among the *Paya* a midwife is regarded by parents and child as a blood relative. This belief is said to have originated among the *Mosquito* and diffused to the *Sumo* and *Paya*. The second of twins and deformed children are killed (*Mosquito* and *Sumo*). Some female children were killed at birth.

844 [847]

Sumo and *Mosquito* women bathe immediately after bearing a child, *Paya* women on the third day. *Sumo* women take a steam bath but use no special structure; in other tribes they bathe in the river. This bath ends a period of ritual impurity. *Mosquito* women, however, are considered impure for one or two weeks. Women also observe a special diet. The return of the mother to the house is celebrated with a ceremony.

846

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ADULTERY.—Morality is at a low ebb, particularly among the Miskito, and most of the disputes and crimes that occasionally take place are the results of quarrels about women. The injured husband inflicts a severe beating on his unfaithful wife or attempts to choke or drown her in order to make her tell the name of the other delinquent, from whom a payment (M.: *mūirin mana;* T., P.: *yal minit;* U.: *yal makalnak*) is exacted. Such a "woman payment" consists generally of a cow or a gun. Otherwise wife beating is not common. Occasionally a woman has committed suicide for having received a sound beating from her husband on account of her unfaithfulness, and the latter was then compelled to pay up to her relatives. Bell (a: 251) states that he had known men keeping wives for the sole purpose of the revenue derived from their misconduct.

DEBT.—If a debtor refuses to pay up or to return or refund the object or money borrowed, the creditor might go to his plantation and pay himself with provisions without risk of punishment. If such a debt can not be collected in an amiable way, the creditor, instead of wrangling with the debtor, might destroy some property belonging to a third person. Pressure is then brought to bear upon the debtor and he has to make good the damage done.

VARIOUS.—Sometimes an Indian who had been grossly insulted and was unable to collect payment would commit suicide, whereupon the offender had to do the same. This system led to complicated cases, and the following has been recorded by the Moravian missionaries. A Miskito woman, being continually mistreated by her husband, ran away from him. The latter then proceeded to the house of his parents-in-law, where he was told that his wife, unable to endure his barbarous treatment any longer, had hung herself. The man understood what that meant and committed suicide without hesitation. Then the woman, whom every one had believed dead, returned to the village. But now the relations of her husband wanted her to commit suicide also for having caused the latter's death by her flight from home. As the unfortunate woman hesitated, not having the courage to do what was asked of her, her husband's relations seized her and hung her to the nearest tree.

1: Conzemius M-4, 5 (1921) 1932
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624 chiefs, called by the Miskito name *wita* or *wihta* (lit.: "head"), resided in the larger villages.

648 Now the government of the two republics, Honduras and Nicaragua, is represented by *comandantes*, who are invariably Ladinos. Indian *subcomandantes* are occasionally named in the larger areas, but their authority is practically insignificant. Some deference is also paid by the Indians to the elders of the settlements, and especially to the sukya. The officials despatched from Tegucigalpa or Managua are rarely of the better element, and have at times committed great abuses among the timid and peaceful aborigines. They are too frequently men of low morals who try to enrich themselves by imposing fines upon the Indians, which are put into their own pocket, or by compelling the natives to work for their personal benefit.

LAWS: CRIME AND ITS PUNISHMENT

627 ADMINISTRATION OF JUSTICE.—In former days the punishment of criminals was intrusted to the individual wronged rather than to special officers of justice. If the injured person did not take any steps to revenge himself he was considered a coward.

177 Toward the middle of the eighteenth century, when British influence
692 spread to the "court" of the principal Miskito chief, special officers, known by the name *kwatmas* (from the English "quartermaster") were intrusted with the execution of government orders and the
681 administration of justice. Punishment was inflicted in the shape of fines, flogging, and death by hanging; prisons were unknown. On their periodical visits these officers used to whip all the young people whom they could seize, in order to cure them of their laziness and stinginess, apparently whether they were guilty of the charge or not. This was called "teaching the people" (M.: *upla smalkaya;* S.: *môh sumalnin, môh sumalnaka*) and had the object of inculcating principles of good conduct and morality. An account of such proceedings is given by Bell (b: 278–282).

685 THEFT.—A thief was compelled according to Indian law to restore twice the value of the stolen object.

847 INFANTICIDE.—This was apparently not considered a crime in former days under certain circumstances. (See Children: Their Birth and Education.)

683 BODILY INJURY.—For any bodily injury, whether done intentionally or not, a payment of "blood money" (M.: *tala mana;* T., P.: *a minit;* U.: *awas makalnak*) was collected.

682 MURDER.—A murderer had to follow his victim into death. If he should not do so voluntarily, the relations of the murdered man might kill him without risk of punishment; besides, in that case, his memory would be dishonored. The *lex talionis* was applied rigidly.

1: Conzemius M-4, 5 (1921) 1932
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supposed to attract the same species and entice it within gunshot.[30] The bones, teeth, and skulls of animals killed in the chase are said to have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaligui*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal weapon of both tribes under consideration. (See Hunting and Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time great festivals, called *asañ lāuwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

[30] There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *trisu*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panama, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

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2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warri[illegible]rticularly of the *Sumo*, were subject to severe tests including dieta[illegible]rictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

1: Conzemius M-4, 5 (1921) 1932
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gold mines; or they work as paddlers on the rivers, which are practically the only means of communication.

The Sumu, on the other hand, are more timid and less enterprising. They are unwilling to leave their wives and children for a length of time in order to work for the benefit of the white men. Besides, even to this day, their wants are few, and they can easily do without practically any article of foreign manufacture. Formerly, however, many of them were active as rubber bleeders, but owing to East Indian competition, the export of that commodity from the Mosquito Coast has stopped altogether.

TRADE AND BARTER

INTERCHANGE OF COMMODITIES.—Among such rude hunting and fishing tribes as the Miskito and Sumu only a very restricted trade can have existed in former days. The rivers, lagoons, and the sea were practically the only means of communication, and this is still the case. The interchange of commodities was generally effected by barter. The Miskito appear to have also employed beads of sea shells as money, while the Sumu of the interior used cacao beans for the same purpose.[28] We are told by M. W. (304) that these two tribes, which were continually in a state of hostility, observed a truce on appointed days; they then met on an island in the lower Rio Coco for the purpose of trading.

These Indians live under an almost perfect equality, and there are no rich or poor among them. They do not strive to accumulate wealth, and the great unwearied exertion, found among our civilized societies, is unknown among them.

FORMER ARTICLES OF BARTER.—The Miskito used to evaporate salt from the water of the sea and lagoons and collect pretty sea shells suitable for beads. These commodities were exchanged with the Sumu for pottery, cotton goods, hammocks, bark cloth, and rough canoes.

During the latter part of the seventeenth century, and for many years following, the Miskito undertook daring sea voyages as far south as Chiriqui Lagoon in Panama, and occasionally even beyond that region. These expeditions were, however, not organized with peaceful trading in view, but for the purpose of stealing cacao from the Spanish settlers at Rio Matina (Costa Rica), and capturing Indians to be sold to the English traders of Jamaica.

PRESENT-DAY COMMODITIES.—Nowadays the Indian's wants from the outside world are many. The Miskito, who are less primitive than their neighbors, were already in commercial relations with

[28] According to G. N. Collins (see Safford in Smithsonian Report for 1916, p. 421) this use still persists in the Mexican State of Chiapas.

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The Paya of Honduras were likewise expelled from the coast, the Miskito advancing as far as Rio Tinto, or Black River, and driving their enemies to the headwaters of the various streams. From the end of the seventeenth century on the Miskito frequently undertook raids into the territory of the Paya and exacted such large contributions of cattle or other things that the latter were obliged to steal them, at the risk of their lives, from the neighboring Spanish settlements, in order to save their families from being carried away and sold into slavery. During these excursions the Miskito took possession of the houses, wives, and children of the Paya until their demands were complied with. On account of this barbarous treatment many Paya fled to the Spanish settlements for protection (Long: I, 326–327). These incursions of the Miskito into the Paya region have continued until recent times (Young: 81; Conzemius, b: 32–33).

The Miskito not only became masters of the whole Atlantic coast line from Rio Tinto to Rio San Juan, but they carried on expeditions in seagoing canoes as far south as Chiriqui Lagoon and even beyond. These incursions were the chief cause of the depopulation of the Talamanca region of Costa Rica. The Miskito also proceeded inland up Rio Sixaula or Tiliri as far as the junction of Rio Coen and Rio Lari.

Isolated marauding expeditions by the Miskito to Costa Rica and Panama still continued practically throughout the eighteenth century. Cockburn (236) states that they invaded Chiriqui in 1732. In 1758 they are said to have been engaged in capturing Indian slaves around Bocas del Toro (Cuervo: I, 349–353). Roberts, writing in 1816, says the following regarding the encroachments of the Miskito on the territory of the Valiente Indians of northeastern Panama: "The Valientes are enemies of the Spaniards and pay a sort of tribute or acknowledgment to the Miskito King annually, which they consider in the light of a gratuitous present according to ancient custom, rather than an acknowledgment as subjects or a mark of subjugation. On more than one occasion they have refused to pay this tribute, and about 50 years ago, when a dispute took place on the subject, the Miskito King's uncle, with the whole of the chiefs and people who accompanied him, to the number of about 50 men, fell a sacrifice to their resentment (Roberts: 71).

The Miskito are even said to have gone as far as to attempt the subjugation of the San Blas Indians (also called Cuna, Tule) on the Isthmus of Panama, against whom their last expedition was sent about 1796. But the invaders, who were 300 men strong, were nearly all killed in the different engagements, and very few of them returned home (Roberts: 49–50). This is the only authority for Miskito incursions as far south as the Isthmus of Panama; the Indians them-

1: Conzemius M-4, 5 (1921) 1932
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selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras) to Chiriqui Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

The place names belonging to the Miskito language, which may be met with all along the Atlantic shore of Costa Rica and Panama as far south as King Buppan's Bluff, owe their origin to the above-mentioned marauding expeditions (Conzemius, a: 300–306). Still permanent settlements were not made by the Miskito on that vast region, the southern limit of their habitat being formed by Pearl Lagoon, where they established themselves during the latter part of the eighteenth century. About that same period they also spread up some of the larger rivers, as the Patúca, Guagua (Wawa), Cucallaya, Prinsapolca, Rio Grande, and especially Rio Coco; on the last-named stream they may be found as far up as Bocay, that is, about 300 miles from the sea by the circuitous course of the river.

TREATMENT OF PRISONERS.—As stated before, the Miskito began their slave-hunting expeditions into the territory of their neighbors toward the end of the seventeenth century. The captive women and children were either kept as slaves (M.: *alba* [1]; S.: *warau*) or they were sold to the Jamaican traders who arrived occasionally on the coast. The boys, when arrived at the age of puberty, were allowed to take a Miskito wife, and the children of such unions grew up as free members of the tribe.

Slave-hunting expeditions in seagoing canoes were particularly directed to the Talamanca region (southeastern Costa Rica), where many Tiribi (Terbi) Indians were reduced to slavery. The same fate met the aborigines living around Chiriqui Lagoon (M. W.: 302; Peralta, a: 20, 93, 95; Peláez: II, 156; Young: 35; Conzemius, a: 300–301). Many references to the Miskito slavers may also be

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In 1722 Spain protested to the British authorities of Jamaica on account of these slaving expeditions, alleging that the Miskito had captured in the valley of Rio Matina and on Tojares Island (Chiriqui Lagoon) over 2,000 Indians (Talamancas, Viceitas, Arinamaes, Abubaes) and sold them to Jamaican traders for arms and ammunition. On October 8, 1722, Diego de la Haya, Governor of Costa Rica, addressed a note to the authorities of Jamaica for the restitution of these Indians. (Peralta, a: 20–31; Fernández: IX, 153.)

The Sumu apparently did not enslave their prisoners, but killed them outright. Scalping was unknown, but the teeth and nails were extracted from the unhappy victims and carried round the neck as trophies. Certain subtribes of the Sumu were cannibals and roasted the enemies captured in war.

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It would appear, however, that later the English buccaneers were more esteemed than the French. Dampier (I, 8) states that the Indians "like the English but do not love the French," while according to Sloane (a: I, p. LXXVIII) the Miskito "do not allow any other nation but the English to settle among them and that they have

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some propensity to the Dutch, but hate the French mortally for their wanton behavior toward their wives." The statements of these two English authors should, perhaps, be accepted with reserve.

The Miskito were of valuable assistance to the buccaneers, for they were, and still are, singularly skillful with the spear. When a party of buccaneers put to sea without provisions they steered to the feeding grounds of the sea turtle or they stopped at a lagoon where the manatee was to be found. Here two Indians set out in their own small canoe. Two Miskito were able to catch enough fish, manatee, or turtle to supply a vessel of 100 men. For that reason they were much esteemed by the buccaneers and nearly every vessel from Jamaica had a couple of these Indians on board (Exquemelin, English ed.: 250; Dampier: I, 1–2, 35–37, 160, 181, 234, 277, 453, and II, part II, 13, 109; Raveneau de Lussan: 440).[43]

The Miskito were not only used as fishermen by the buccaneers but they also bore arms. They were bold and courageous in the fight and they shared in the capture. Among these sea rovers the Indians became first acquainted with the use of firearms and soon proved very good marksmen (Dampier: I, 2, 8). Miskito strikers even accompanied the buccaneers in the Pacific Ocean. In January, 1681, a party of English freebooters under Sharp and Watling were anchoring at the island of Juan Fernandez in the southern Pacific, about 400 miles west of Chile. Being persecuted by three Spanish vessels they hurriedly lifted anchor and sailed away, leaving behind a Miskito named William, who was hunting in the bush at the time. This Indian lived a solitary life on the island for three years when finally he was rescued by another party of English buccaneers under Cook. The first man from the rescuing vessel jumping on land was likewise a Miskito, named Robin. Dampier belonged to the party and relates the account (I, 84–86).[44]

MARAUDING EXPEDITIONS TO THE SPANISH SETTLEMENTS.—Led by their allies, the buccaneers, the Miskito also formerly undertook incursions in the interior of Honduras and Nicaragua by ascending the larger rivers. They surprised and plundered the nearest Spanish settlements, capturing the women and children. During the eighteenth century the towns Catacamas, Juticalpa, Segovia (now Ocotal), Jinotega, Matagalpa, and some settlements of Chontales were several times entirely destroyed and some of them were then

[43] Vide also Basil Ringrose, The History of the Bucaniers of America. Part II. The dangerous voyage and bold attempts of Capt. Barth. Charp, Watlin, Sawkins, Coxon, and others, in the South Sea. London, 1699, chap. XI, p. 54.

[44] See also Ringrose, *ubi supra*, chap. XV. The Scotch sailor Alexander Selkirk, whose adventures suggested to Daniel Defoe his famous work Robinson Crusoe, was therefore not the first or the only inhabitant of Juan Fernandez; the latter lived there from 1704 to 1709.

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transplanted some distance away from the navigable rivers in order to be less exposed to attack (M. W.: 300, 302, 306; Peláez: II, 165; Peralta, b: 102, 120; Belt: 241, 255–256). In those days the products of Nicaragua were generally shipped by way of Rio San Juan, but this important waterway was often in the hands of the Indians.

Attacks by the Miskito on the Spanish settlements were also carried on occasionally as far north as Río Chamelecón in Honduras; sometimes these Indians joined the English logwood cutters operating in what since has become British Honduras.

More frequently the canoes of the Miskito were directed southward toward Rio Matina in Costa Rica, where the Spaniards had established important cacao plantations during the seventeenth century. The latter had to be abandoned later, owing to the incursions of the Indians. The historians of Costa Rica devote large space to these expeditions into their territory. (See also M. W.: 302, 307, 310.) Although they ceased gradually during the latter part of the eighteenth century, acts of authority were exercised by the Miskito on that coast for some time afterwards. Still in 1838 they monopolized the fishery of the hawk's-bill turtle as far as Puerto Limón, collecting a tribute from the fishers engaged in that occupation (Cooper: 12).

THE MISKITO IN THE JAMAICAN MAROON WAR.—The Miskito rendered very valuable service to the English of Jamaica in aiding to suppress the maroon rebellion on that island. These maroons were the descendants of the Negroes and mulattoes who took to the mountains, in order to preserve their freedom, when the English in 1655 wrested Jamaica from the Spaniards.

On June 25, 1720, a convention was signed between Sir Nicholas Lawes, Governor of Jamaica, and Jeremy (Jeremias), "King" of the Miskito, whereby the latter engaged himself to send a body of Indians to track the revolted slaves. This treaty was formally agreed to and passed upon by the Assembly of Jamaica.

Two hundred Indians were brought to Port Royal and organized in companies under their own officers. They were paid 40 shillings a month and a pair of shoes. They remained several months and rendered valuable services to the English. A few years later the maroons were active again and about 1725 Capt. Robert Lade brought 100 "Muschetos" Indians to Jamaica to fight them (Lade: II, 7, etc.).

Again, in 1738, 200 Miskito were brought for the same purpose. They were formed into companies under their own leaders with white guides assigned to each company, who were to lead them to the enemy. They did good service as trackers and with their assistance the maroons were soon pressed on all sides, cut off from their provision grounds, and compelled to make peace (Long: II, 344–345; Edwards: I, 529–530).

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[754] Among some tribes, this ceremony is repeated at a later date. The *Sumo* [754] are said to have practiced circumcision. The couvade is general.

[755] Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

[761] **Puberty.**—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

[761] Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

763 **Death.**—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

764 The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of [533] chiefs are reported from one locality, probably *Sumo*.

765 The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter.

[767] Shamans invoke the soul in order to discover who was responsible for
769 the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

770 According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Poya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

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RELIGION

The *Sumo*, *Mosquito*, and *Poya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Poya* believe that their god sowed men in the

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The men taking part at the *asaŭ ldiwana* had the whole body painted black and wore nothing but the loin cloth. They had to be ceremonially "pure" (*sunu*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *puput* (maize liquor), for every one was afraid of him.

At the *asaŭ ldiwana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŭ al yaŭ*, "I am a man," whereupon his adversary replies *yaŭ bik al yaŭ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

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721 selves consider King Buppan's Bluff (Peñasco de Buppan, Frontón de Guapan), a promontory situated about 22 miles east of Escudo de Veragua Island, as the southernmost point visited by their ancestors.

721 Thus the Miskito acquired an ascendancy over practically the entire Atlantic seaboard from Cabo Honduras (near Trujillo in Honduras) 197 to Chiriqui Lagoon (Panama). Their language is understood by many Indians from the neighboring tribes (Sumu, Rama, and Paya), and still plays the rôle of a *lingua franca* in certain parts of the Mosquito Coast. The part played by the Miskito in Central America in former days is similar to that of the Carib tribes of South America and the Antilles, but in the latter region the rôle of the English was taken by the Dutch.

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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kakuti* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.[48] M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *trin;* S.: *pala, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

[48] Noticias estadisticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 10, 1867.

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Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

1: Conzemius M-4, 5 (1921) 1932
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handles.[14] These conditions are not yet apparent on the hands of children.

HAIR.—All these Indians have an abundance of hair growth extending very low over the forehead, but it is very scarce on the other parts of the body. The hair is usually black, and very straight and coarse, but occasionally hair with very long low waves may be met with among the pure Indians. Gray and white hair occurs sometimes but not by far as frequently as among the white race. Baldness is practically unknown. Beard growth is very scarce, while chest hair is totally absent among the pure Indians.

LONGEVITY.—There are no reliable figures to be obtained regarding the age of the older Indians. Very few of them seem to have passed their sixtieth or seventieth birthday; still during the years 1917–1922 the writer met a number of Indians who were about 4 to 6 years old at the great eruption of the volcano Cosegüina on the Bay of Fonseca in 1835. This catastrophe, which was accompanied by great earthquakes, is still spoken of by these Indians as the "Great Darkness" (M.: *tihmya-tara;* S.: *puk-sani, puk-barak*);[15] a thick rain of ashes poured over the coast at the time and the sun was as invisible as at night.

DEFORMITIES.—In former days deformed children were not allowed to grow up; they were either buried alive or left to starve. This accounts for the rare cases of deformities encountered among these Indians. Only the strong and healthy being allowed to grow up and produce children, there is little variety of physical and mental development. Even were such a deformed child allowed to grow up, it would not easily find a mate and would die without leaving any children behind. In civilized countries deformities are propagated, as such people will find someone to marry them if they have fortune.

If an Indian has some deformed limb, either brought with it into the world or the result of an accident, he will secrete it as much as possible from the sight of other people, as such is considered a great disgrace. It would be an insult to ask him to show it or to even refer to it.[16] In case of a dispute among Indians one will immediately pick out the weak points in the personal appearance of his adversary.

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[14] See the illustration given by Schultz (69).

[15] The abbreviations for the tribal names used in the present study are the following: M.=Miskito; S.=Sumu; T.=Twahka; P.=Panamaka; U.=Ulwa.

[16] At the Sansan village on Rio Coco the writer knew a Miskito who had lost several fingers on one hand through an accident at the gold mines of Pispis; from that time on he always carried a bandage around the mutilated hand. In the same village a young boy, having lost several toes, was continually wearing a shoe on that foot, although the other foot was always bare.

1: Conzemius M-4, 5 (1921) 1932
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3: Pijoan D-5 (ca. 1945) 1946
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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, whereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[25] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[26]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kualuntura)* which is wrapped about the hips and extends

[25] Roberts, L. J.; Blair, R.; Leuning, E., and Scott, M. Effect of a milk supplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300). II. Ossification of the bones of the wrist (pp. 494-509). III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, 56.

1: Conzemius M-4, 5 (1921) 1932
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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalnia;* U.: *sumalnaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 ● 763 [888]

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about. 761 763

The female relations of the deceased cut their hair off; according to Bell (a: 255; b: 90) this is done under the idea that no one should handle it after the dead person. In former days the Ulwa Indians used to cut their hair off also at the death of their wife (Wickham, b: 208), but nowadays the men of both tribes always keep their hair cut short. 765

The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialize by pronouncing its name. [775]

1: Conzemius M-4, 5 (1921) 1932
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The Indians do not eat it, believing that by so doing they will become forgetful like the tortoise itself, and become lost in the bush or misplace things, and the like.

Strange animals are regarded as evil spirits and their appearance is a bad omen; the Indians do not dare to kill them. Heath, while stopping with his Miskito crew from Kiplapihni at an empty house at Burimak (middle Rio Coco), came across a strange bat, which event he relates as follows: "We saw clinging under the palm roof a small snow-white bat. Some felt sure that it would suck our blood in the night; so it was killed, but turned out to be a perfectly harmless creature with very beautiful fur. But now, as no one present had seen such a white bat before, some declared that its coming was a bad omen; others that it was sent by an evil spirit, or was even more likely itself to be an evil spirit; that the man who killed it would soon die of a pernicious fever, etc. It took some time to calm the fears of the women especially." (Heath, b: 377.)

CHARMS, AMULETS, TALISMANS.—Some of the ornaments are undoubtedly supposed to act as charms, amulets, or talismans, as they are worn chiefly by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tattoo, etc., seem to have had originally a religious and magical significance rather than a desire to embellish the appearance. Red and black paint is still regarded a prophylactic against disease.

Charms are used for managing the opposite sex, as a cure for barrenness by women, in order to have a male child, and for luck in hunting and fishing. Jaguar teeth are carried as talismans for courage, strength, and to stimulate virility and excite venery.

Charms on fruit trees have the object of increasing their yield and keeping birds, animals, and even man from plundering them. In order to render fruit trees more productive the Miskito drive a nail in the side of the stem facing the west. When they make staffs for turtle spears they also prefer utilizing the west side of the stem of the pejivalle palm, believing that part of the trunk to be more durable and resistant.[75]

Celts or stone axes, which are occasionally dug up in the fields, are regarded as "thunderbolts," and were worn in former days as amulets for protection against lightning. They were also supposed to render the bearer brave and enduring. They are considered very efficacious in healing certain diseases, and the sukya makes use of them in practicing his rites of sorcery. On account of these proper-

[75] The Creoles, in making tea from the medicinal bark of certain trees, likewise prefer using the bark on the side facing the sunset.

1: Conzemius M-4, 5 (1921) 1932
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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kasya;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78]

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kati ñi-akura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu ñi-akura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers.

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *piyata sikka*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless.

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontín" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast.

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects.

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1920, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles. Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [53]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation. During infancy a folding flap of wood at the top of the cradle was tied firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [487]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts are used for down-river traffic. Large keeled canoes, often equipped with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a two-beam loom. Thread was formerly dyed and designs were woven in the cloth. Sometimes feathers, particularly a fringe of white Muscovy duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women model small vessels out of a lump of clay but build up large ones with coils. They polish them with a pebble, dry them for several days, and fire them in the open. Pottery types include jars about 4 feet (1.3 m.) high, various types of jugs, water jars, small bowls, griddles, and tobacco pipes. All vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 415
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the *Mosquito* are said no longer to use them. Metates are flat-topped boulders, which only rarely have a trimmed surface. Manos are round pebbles.

1: Conzemius M-4, 5 (1921) 1932
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000 last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

752 SNAKE BITES.—Guaco (*Mikania* sp.) is one of the various plants used as an antidote to the virulence of snake bites, not only by the Indians but by the Ladinos and Creoles as well. In order to neutralize the venom, the sukya also administers an infusion prepared from the bark and leaves of a leguminous shrub or small tree, called *daka*, while the *brum sirpi* weed is applied externally. The patient must abstain from eating food of which snakes are supposed to be fond. A woman *enciente* must under no condition be seen by the patient, otherwise the latter will die.

278 BUSH MEDICINES.—The Indians know a great number of bush medicines (M.: *sika;* T. and P.: *panbas, panabas;* U.: *dibasta*) for external or internal use. Many native plants and trees are employed, the bark, roots, leaves, and seeds being utilized. The white, delicious resin of the copal or incense tree (*Protium* sp.), copaiba balsa (*Copaifera officinalis* L.), Peru balsam (*Myroxylon pereirae* Klotzsch syn. *Toluifera pereirae* Baill.; M. and S.: *bakus*), the gum of the locust tree (*Hymenaea courbaril* L.; M.: *lâsa, laka;* S.: *tipi*), ipecacuanha (*Uragoga ipecacuanha* or *Polygala costaricensis*), sarsaparilla (*Smilax officinalis*), and unguents prepared from the oils extracted from the seeds of various trees are employed in the treatment of certain infections and sores.

The yellow milk of a small tree, known locally as "samboo gum" or "leche baría" (M.: *samu;* S.: *pûmaba*), is applied in poultices for rheumatism; it is also said to cure the *bulpis* skin disease, when the latter is still in its first stage.

The seeds of the piñon (*Jatropha curcas* L.; M. and S.: *pisik*) and the antidote bean (*Fevillea cordifolia* L.; M.: *mukula;* S.: *mula*) are administered as an emetic and as a purgative. The medicinal properties of the castor-oil plant (*Ricinus communis* L.; S.: *unapalan*), which grows wild on the river banks, are well known. De Candolle, however, believes this plant to be of Old World origin; curiously enough, the Miskito have no native name for it.

Toothache is cured with the milk of the cachito tree (*Tabernaemontana donnell-smithii* Rose; M.: *buksa mahóra;* S.: *wako*); the latter is also used for skin troubles.

An ill-smelling herb reaching about a foot in height and known as fit weed (*Eryngium* sp.; M. and S.: *kisûri*) is used for snake bites and epileptic fits. The Ladinos call it "culantro" (coriander) and use it as a condiment, but it must not be confounded with the true coriander (*Coriandrum sativum* L.), which is cultivated sometimes in Central American gardens under the name "culantro de Castilla."

The roots of the cerrón cantil or barsja (M.: *sus sûika;* S.: *tata, daka, tisliñ*) enter into remedies for venereal diseases. The bitter-

1: Conzemius M-4, 5 (1921) 1932
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paraphernalia of these doctors, small specimens being considered more efficacious than large ones. One of these celts is wrapped around the aching part of the body in order to relieve pain. In case of stomachic troubles the sukya administers drinking water wherein such a celt had been deposited for some time.

TREATMENT.—The sukya heals generally in the dark, especially after sundown. His methods of approach are prescribed by custom. First he imposes a general fast or perhaps only minor restrictions in diet on the patient, and occasionally on some of the latter's near relations likewise. Food which the patient is allowed to eat is known as *byñaku* (M.) and *kuñ* (S.). Sometimes the sukya ties a knotted cord round the legs, arms, breast, or neck of the patient, and the latter must abstain from the use of certain food, from salt and chili pepper, and observe continence for as many days as there are knots in the cord.

The cure proper consists in whistling over the sick person, blowing tobacco smoke over him, and massaging and sucking the afflicted body parts. The sukya purifies the drinking water, or any other beverage intended for the patient, by exposing it to the dew for some time, and then blowing into it with a bamboo rod or a tobacco pipe so as to produce bubbles. Painted sticks of hardwood are stuck in the ground around the bed of the sick person in order to keep evil spirits away. The sukya walks or dances around the sick bed, singing or muttering mysterious and incomprehensible words which are supposed to belong to the "spirit language." If a remedy does not seem to do any good, the sukya tries another one, just as does his learned confrère in more civilized countries.

Nobody must pass to windward of the house where the patient is undergoing a treatment, as one would kill the latter by "robbing him of air and breath." Should these orders be trespassed the sukya will exact a fine from the guilty ones. A woman *encinta* or with an infant must also keep out of sight as she might cause the death of both patient and sukya; these same restrictions apply also to any person of either sex having assisted shortly before at a burial.

Should the sick person not become any better, or even die eventually, the sukya will claim that his instructions had not been carried out carefully. Generally he ascribes such a calamity to disobedience in food restrictions. The actual or presumed breach of the above-named injunctions affords a convenient loophole for lack of success in the treatment.

Surgical operations are sometimes practiced by the sukya with the aid of splinters from broken glass bottles or bones, and chips of flint or obsidian. As antiseptics he uses ashes, tobacco, beeswax, and gums from certain trees.

1: Conzemius M-4, 5 (1921) 1932
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SKIN INFECTIONS.—Cutaneous infections are very common in certain regions, a fact already recorded by Exquemelin (French ed.: II, 277), who visited the Miskito of Cabo Gracias a Dios; they are the result of ignorance of the most elementary principles of hygiene.

A certain skin disease, which starts by a burning or swelling of flesh, is said to be caused by the urine of an insect, which, like the disease itself, is called *mustukra* by the Miskito.

A specific ulcer, resembling cancer, and known locally by the name "bay-sore" (M.: *lasa krĕbisa* "the devil is boring"; S.: *pilau, tamak*), is sometimes caught by Indians and Negroes. It breaks out on face, arms, and legs, and is generally attended with very acute pain. It is cured by powerful caustics, or applications of a corrosive nature. The common ulcer, abscess, or carbuncle is called *yukri* (M.) and *suru* (S.).

Various other bad skin diseases may be found in certain regions; they are known by various names (M.: *yats, klĭkklĭk, kusuo-dūya;* S.: *una*).

A cutaneous affection, sometimes taken for leprosy (which is rarely met with), is very common among both tribes. It is known by the names *bulpis* among the Miskito and *mara* among the Sumu; the Spanish-speaking Central Americans call it "bienteveo," "carate," and "mal del pinto." It occurs in white, red, and black blotches; for that reason the Ladinos refer derisively as *gente pintada* "painted people" to the ones afflicted with this disease.

Ringworm (M.: *sus, sihiri, bulpis twaknira;* S.: *mara pāū, mara titis*) is also met with among the Indians. Small warts (M.: *sisrama;* S.: *titismak*) also occur on the hands.

Painful sores may also be caused by the jiggers or chigoes (*Sarcopsylla penetrans*), a sort of flea, which is very common during the dry season but disappears gradually at the beginning of the rainy period. This insect lives on the ground and is especially common around the dwellings where pigs are allowed to roam. It burrows itself under the skin and toenails of man and animal to deposit its eggs. If the latter be taken out immediately with a disinfected needle or the point of a knife, the wound will heal without further care.

Minute ticks cover every bush during the dry season. They fix themselves to the body of man and animal and bury their head in the skin. Sometimes they cause painful inflammations.

YUMU, OR STOMACH ACHE.—This state of ill being is very common among the Miskito and appears to be merely some sort of indigestion due to overeating. The Indians believe that it is caused by the spirit of an animal which has entered the body of the sick person. This may have taken place by eating a piece of the animal in question, or by being scared at the sudden appearance thereof, while being out in the bush. Thus if the agouti (kyaki) has caused the ill the latter

1: Conzemius M-4, 5 (1921) 1932
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will be known as *kyuki yumu-ka*. The Sumu have apparently taken this belief from the Miskito, and they have no distinctive name for the ill; the Rama of Nicaragua call it *yakuki*.

The sukya cures this illness after its source has been revealed to him in dreams, for the treatment differs slightly according to various animals which have caused it. But in all cases the belly of the patient is strongly massaged with animal grease (also vaseline, coconut oil), while the sukya keeps on continually a low whistle in order to induce the spirit to depart. Among the Christianized Miskito there are also some people who heal *yumu* by similar methods; they are known as *yumu yabaka uplika* "people curing yumu."[46]

Women *enciente* may occasionally suffer from *kwihra yumu-ka* "pregnancy yumu"; the child is supposed to die then invariably, unless the sukya applies a treatment.

OTHER INDIGENOUS DISEASES.—Dysentery (M.: *taldura;* S.: *bl'pau*) occasionally appears in the form of an epidemic; it is generally cured by the administration of an infusion from the bark of the nance tree (*Byrsonima crassifolia* H. B. K.).

To cure diarrhea (M.: *byara plapaya;* T., P., [illegible]*in;* U.: *bawas lanaka*), the favorite remedy is an infusion pre[illegible] boiling the bark of the mountain guava tree or the seed of t[illegible]ote or monkey apple. The Sumu also boil the rootstock (M.: *laka;* S.: *sara*) of the black or Ulwa banana.

According to the investigations carried on by the Rockefeller Foundation, hookworm is found on about 75 per cent of the Indian population living around Matagalpa. There is no doubt that it is also common among the Indians of the Mosquito Coast. Hookworm is seldom fatal, but there is progressive anemia and frequently interference with mental and physical development, causing occasionally premature death.

Children especially seem to be infected with intestinal parasites, as may be seen from their color and their enormously swollen belly; this is largely due to their habit of eating earth, charcoal, and the like.

Rheumatism (M.: *kyaia ldiwaya, dusa ldiwaya;* S.: *wakal dalanin, wakal dalanaka*) is supposed to be caused by thorns or fishbones which have been introduced into the flesh by evil spirits. The sukya pinches and kneads the afflicted spot, then makes a small incision with a glass splinter and, applying his mouth to the wound, he sucks a little and finally produces a prickle or bone, which he had carefully hidden between his teeth.

[46] Ziock (162) gives *yumuk* as the Miskito name for a native doctor curing with medicines. In the Carib dialects of Surinam and adjacent regions *yumu* is the name for some sort of spirit.

[i.e. yumu, or stomachache, see cat. no. PA119-20 – Analyst]

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wood or hombre grande (S.: *wanabaka*) is said to be efficacious in case of snake bites. 278

The woody rootstock of the China root or cuculmeca, a sort of French brier (S.: *samaldi*, *wasalanaka*) is boiled in water and the decoction is used to clean the blood, and as a preventive against snake bites.

The small "beans" contained in the pod of the pissabed or frijolillo shrub (M.: *sitsitinya*) are toasted, ground, and used as coffee on account of their diuretic properties; the root of this plant is employed in malarial fever.

The large round leaves of the cowfoot or Santa Maria bush (M.: *sikatara;* S.: *kalamata*) enter into poultices for a swelling of the flesh, while spider webs are applied to wounds in order to stop bleeding. Wild honey is also used in medicine.

PRESUMED CAUSE OF DISEASES.—The cure of the sick is practically always left to the sukya; the latter is generally a clever herbalist, and the treatment applied by him is often excellent, but the remedy in itself is considered of no avail unless certain rites are observed by the healer as well as by the patient. 756

According to these primitive people, indigenous diseases and accidents are always due to the agency of some evil spirit (M.: *lasa;* T., P.: *walasa;* U.: *nasal*) under whose power the sick person is supposed to be. The mischief-maker may send a snake or a jaguar to harm the intended victim, or cause a tree to fall upon him, or cause his canoe to upset, or bring about some other calamity and ill luck. Thus toothache is supposed to be caused by a worm (M.: *sūkri, siri*) that has been sent by these evil powers to bore the tooth. People walking in their sleep are said to be possessed by demons. Epilepsy is also caused by the temporary possession of the individual by such evil spirits; hence fits are called by the Miskito *wlasa prukaya* "to be beaten by the devil." For the cure of this disease a decoction prepared from the *kissuri* herb is said to be very efficacious. 753

This evil influence may be counteracted through the agency of the sukya who manages to exorcise the spirit from the sick and then brings about a complete cure.

DIAGNOSIS.—Through the use of narcotics, especially the excessive use of tobacco, the sukya throws himself in a condition of wild ecstasy, and goes into trances and hypnotic states. During such an abnormal condition he is supposed to be in relation with friendly spirits whom he had invoked previously, and who reveal to him the source of the illness and the mode of cure. 756

HEALER'S INSIGNIA.—The insignia or kickshaws of a sukya during a cure are three or four black hardwood sticks with carved heads and several magic stones and dolls or manikins of white tunu cloth. Stone axes, which are regarded as thunderbolts, figure also among the

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278 Camotillo is the Spanish name for a tuberous plant, said to be not unlike the sweetpotato vine. It is supposed to grow in a wild state in certain regions of the Mosquito Coast, in the neighborhood of the rivers, but it is known only to few persons. The tuber is dried in the sun and reduced to a fine powder by a very laborious process. After pulverization it is introduced into the food or drink of the intended victim. Death will set in after exactly as many days as the tuber in question had been extracted from the soil at the time of administration.

The Ladinos believe that many Miskito and Sumu are acquainted with this manner of disposing of an enemy, but I was unable to obtain from these Indians any reliable details pertaining to the plant. All my Indian informants denied knowing it. In 1919 the candidates for president and vice president of Honduras died several months previous to the election, and the ignorant people of that Republic ascribed their deaths to the administration of camotillo by adherents of the rival political party.

753 WITCH POISON.—Many Indians believe that poison can be wafted through the air to the intended victim. The fear of "buried poison" 754 has been introduced among the Miskito by Negroes from British Honduras and Jamaica, who have settled at the coast. In fact the Miskito of Rio Coco and Honduras nowadays ascribe disease not so much to the mischief of evil spirits as to the presence of buried poison in the neighborhood of the sick person's house. This poison is supposed to have been hidden there by one of his enemies with the object of causing him to fall into some lingering disease, as dysentery, and eventually to die. Such poison, which is generally inclosed in a bottle, is said to soak through the cork, spread to the surface, and then cause disease to all the people in the neighborhood.

755 When after the administration of different remedies there is no improvement in the condition of a sick person, a "poison doctor," that is, a sukya skilled in the discovery of such witch poison, is called. The latter, upon his arrival, takes a little walk around the house, and then pretends to smell buried poison in the neighborhood. He promises to take it out if everyone in the settlement will give him a small amount of money. As the presumed bad effects of such buried poison will gradually spread to the whole village, everyone will pay his share, and the following day the sorcerer promises to do the needful. In the meantime, generally during the night, he buries a small flask of a dark liquid near the house of the sick person. In the morning the entire population of the village is present in order to witness the extraction of the source of the illness. After searching the vicinity of the house for a considerable time the sukya finally walks to the spot where he buried the small bottle during the night, and then triumphantly shouts: *Nara sa* "Here it is." He shows the

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287 PREPARATION OF TUNU CLOTH.—The tunu tree is cut down and deprived of its bark; the latter is then soaked in water for a few days, after which the sticky gum or milk adhering to it is scraped off. The bark is then dried in the sun and kept in the hut until the women find time to pound it into cloth. In this state it is called *kusni* by the Miskito, Twahka, and Panamaka, and *kuska* by the Ulwa. As it becomes hard and shrinks considerably, it has to be submerged in the neighboring stream for a short time before the pounding of it begins. The latter operation is performed on a small log[33] (M.: *tun-dusa;* S.: *lañlañ*) with the aid of a wooden mallet having the shape of a short thick club, into which longitudinal ridges have been made at the head part. This mallet is known by the names *kakka* and *para*, after the two small species of palm, from the stem of which it is made.[34] The Miskito living around Brus Lagoon and on the lower Rio Patuca also make use of the stem of a small fan-leafed palm which grows in that region and is known to Indians and foreigners by the name "palmetto." The bark extends gradually upon being pounded, and it becomes soft and flexible. After being washed and dried, it is ready for use, and has a brownish color. In Oceania the same process is employed and a similarly shaped mallet is used to manufacture the bark cloth, known by the name "tapa," but the tree of those regions is a species of Morus.

WHITE BARK CLOTH.—A similar cloth, but almost white in color and of superior quality, is obtained by the same process from the inner bark of a species of Ficus (S.: *yakuta, yakanta*) and likewise from the rubber tree (*Castilla* sp.). But in both cases the manufacture of the cloth is more laborious. The cloth from these two trees is known locally as "white tunu" (M.: *tunu pihni;* S.: *yakanta, tas-banna*); it [754] is used by the sorcerer in connection with incantations. For this purpose the sukya marks it with designs in black and red obtained with the aid of clay, charcoal, or vegetable juices.

Raveneau de Lussan (439) mentions the manufacture by the Miskito of clothing and covers from the "bastard palm"; the present writer ignores what kind of tree is meant thereby, as no part of any palm is utilized nowadays for such a purpose.

CERAMICS

323 Pottery making is rapidly becoming a lost art among the Sumu, owing to the introduction of iron and cheap tinware, while it is entirely unknown to the Miskito of the present day. The Sumu from Rio Bocay have attained some skill in making earthernware of different

[33] According to Exquemelin (Engl. edit.: 251) the Miskito were pounding their bark cloth upon stones around 1671.

[34] It is not uncommon that the plant, which furnishes the material, gives also the name of the tool.

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ordinary mortals. Thanks to these supposed powers, he is feared and respected far and wide. Such a state of affairs is occasionally very injurious to the Indian community as a whole, but in general abuses on the part of the sukya are not common.

Besides curing the sick, the advice of the sukya is sought in many instances. He is consulted in order to find out the whereabouts of a lost or stolen object, and he furnishes remedies to cure ill luck, to influence the heart of a person of the opposite sex, to increase the valor and courage of a man, and the like. He will inform the hunter how to proceed in order to secure plenty of game, for he has generally a good knowledge of the instincts and habits of animals. If he is unsuccessful, he claims that his client has transgressed some prescription.

Some of these shamans have some knowledge of astronomy; others imitate the voice of other persons or of animals and birds, and some appear to be clever ventriloquists. They foretell the death of a sick person, and help artificially by means of poison on the specified day, in order to strengthen their reputation.

The sukya will also be asked to harm an enemy by casting an evil spell over him. The usual method followed by the Miskito sukya is to fire a gun in the direction of the person upon whom he wishes to inflict injury. His Sumu confrère will send disease or death by mistreating or stabbing an object, usually a doll or puppet (M.: *yapti;* S.: *dilaina*), made of white tunu bark, and supposed to represent the intended victim. Some of these sorcerers are also said to transform themselves into a snake or jaguar and then harm their enemy.

There are good and bad sukyas, who are sometimes at feud with each other. In his own village the sukya is generally said to be good, but in the neighboring settlement there is a bad one, whom he has to fight and send away the evil spirit which the latter despatches in order to cause disease and death. The bad sukya will, for instance, send an animal or bird with poison to the neighboring village, but his confrère from the latter settlement sees it coming and sends it back. The animal goes hither and thither, until finally the "stronger" of the two opponents wins.

INITIATION OF THE SUKYA.—The choosing of his career by the sukya is supposed not to be voluntary. A person whom destiny has picked out for this high office is said to come under the influence of some spirits, from whom he is unable to deliver himself. During the night he acts like an insane person; he gets up from bed and talks with invisible beings in a mysterious "spirit" language.

In this state he makes prophecies, and if these come true his friends will urge him to become a sukya. He then prepares himself for his career through fastings, vigils, and other means of achieving exhaustion and the novice will be reduced to a skeleton. During this

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catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

THE SPIRITIST.—A new movement, not unlike the nyalism among Jamaican Negroes, has appeared among the Christianized Miskito during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito as *spirit-upliks* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him. 754

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements. 583

COURTSHIP.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yumni kilkaya silka;* T.: *yumni talaia panankas;* U.: *pumka talaaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *miskara kilkaya silka;* T.: *ba talaia panankas;* P.: *ma tsikni talaia panankas;* U.: *di dutka talaaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of 832 [825] [278]

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a little while, feeling himself alone, he opened his eyes, and looking around, he found himself only a few steps from his own house. 539

Upon getting home, his wife wanted to know where he had been so long. He refused to tell the truth for fear of the revenge of the people from the peccary country, and told her that he had been lost in the bush. But she noticed that he was hiding the truth and kept on insisting that something extraordinary must have happened for his having succeeded in killing a *sâbakaya*.

Finally he agreed to tell. He sat in his hammock, while all the neighbors surrounded him to hear the details of his strange adventure, and then he proceeded to narrate everything that had happened to him since he left home. But the moment he finished his story he died.

WITCHES.—Certain people of either sex are supposed to be greatly addicted to witchcraft, and to be able to transform themselves at will into owls or "lechuzas" (M.: *imi yula* or *kimi yula*; S.: *yala mōlh*[a]). 754

Some bad people transform themselves into a smaller species of owl (T.: *yarak*; U.: *sōl*) and in their zoömorphic form introduce themselves during the night into the huts of their enemies, when the latter are asleep, in order to carry off the small children. The Miskito do not participate in this belief.

CYCLOPS.—In the bush lives also a curious being, shaped somewhat like a giant human being, but having a head similar to that of a dog. It has only one eye, while its large mouth is at the navel. 776

WATER NYMPH.—The mermaid or water nymph (M.: *liwa*; T., P.: *was molhai*; U.: *was sirōa*) is an evil water animal, which occasionally causes snags and strong ripples where the water otherwise is very smooth. It drives the fish away so that the Indian can not catch anything, and it incites the alligator to attack the canoes and upset them. It also assumes the shape of a beautiful woman and walks on land to entice the young men down to the waterside, when suddenly it pushes its victim into the water and devours it. Its head is that of a human being, but the body resembles that of a fish. This monster is also said to inhabit the sea, where it occasions waterspouts and hurricanes; the Miskito living at the coast call it also *kabo wlaska* "sea spirit."

WAIWIN OR WAIWAN.—This name is applied by Miskito, Sumu, Rama, and Creoles to a black, doglike bush animal, with a nose shaped like that of the large anteater and with fiery eyes similar to balls of fire. It corresponds approximately to the "cadejo" of the Ladinos. Its claws rattle on the ground as it runs along with great swiftness. It spits fire and does not do any harm if left unmolested, but will throw down on the ground any one trying to stop it. There 825

[a] Lit., "people of the stars."

773 same way that manioc is planted. Some of the tribes recount a myth of a
774 great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

775 The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

776 The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with
789 innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

756 Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may
755 succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs
[778] knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

756 A shaman may also prophesy the future or determine the route hunters
[787] should take in order to find game. By conjuring, a shaman may cause
[754] harm to come to people. A shaman may be retained by a person to eliminate an enemy.

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164 will be known as *kyaki yumu-ka*. The Sumu have apparently taken
753 this belief from the Miskito, and they have no distinctive name for the ill; the Rama of Nicaragua call it *yakuki*.

The sukya cures this illness, after its source has been revealed to
755 him in dreams, for the treatment differs slightly according to various animals which have caused it. But in all cases the belly of the patient is strongly massaged with animal grease (also vaseline, coconut oil), while the sukya keeps on continually a low whistle in order to induce the spirit to depart. Among the Christianized Miskito there are also some people who heal *yumu* by similar methods; they are known as *yumu yabaka uplika* "people curing yumu."[65]

Women *enciente* may occasionally suffer from *kwihra yumu-ka* "pregnancy yumu"; the child is supposed to die then invariably, unless the sukya applies a treatment.

164 OTHER INDIGENOUS DISEASES.—Dysentery (M.: *taldura;* S.:
751 *ba-pau*) occasionally appears in the form of an epidemic; it is generally cured by the administration of an infusion from the bark of the nance tree (*Byrsonima crassifolia* H. B. K.).

To cure diarrhea (M.: *byara plapaya;* T., P.: *ba lanin;* U.: *bawas lanaka*), the favorite remedy is an infusion prepared by boiling the bark of the mountain guava tree or the seed of the zapote or monkey apple. The Sumu also boil the rootstock (M.: *labu;* S.: *sara*) of the black or Ulwa banana.

According to the investigations carried on by the Rockefeller Foundation, hookworm is found on about 75 per cent of the Indian population living around Matagalpa. There is no doubt that it is also common among the Indians of the Mosquito Coast. Hookworm is seldom fatal, but there is progressive anemia and frequently interference with mental and physical development, causing occasionally premature death.

Children especially seem to be infected with intestinal parasites, as may be seen from their color and their enormously swollen belly; this is largely due to their habit of eating earth, charcoal, and the like.

164 Rheumatism (M.: *kyaia lāuwaya, dusa lāuwaya;* S.: *wakal dalanin,*
753 *wakal dalanaka*) is supposed to be caused by thorns or fishbones
755 which have been introduced into the flesh by evil spirits. The sukya pinches and kneads the afflicted spot, then makes a small incision with a glass splinter and, applying his mouth to the wound, he sucks a little and finally produces a prickle or bone, which he had carefully hidden between his teeth.

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[65] Ziock (162) gives *yumuk* as the Miskito name for a native doctor curing with medicines. In the Carib dialects of Surinam and adjacent regions *yumu* is the name for some sort of spirit.

[i.e. yumu, or stomachache, see cat. 116, p. 119-20 - Analyst]

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paraphernalia of these doctors, small specimens being considered more efficacious than large ones. One of these celts is wrapped around the aching part of the body in order to relieve pain. In case of stomachic troubles the sukya administers drinking water wherein such a celt had been deposited for some time.

TREATMENT.—The sukya heals generally in the dark, especially after sundown. His methods of approach are prescribed by custom. First he imposes a general fast or perhaps only minor restrictions in diet on the patient, and occasionally on some of the latter's near relations likewise. Food which the patient is allowed to eat is known as *bydinka* (M.) and *kuñ* (S.). Sometimes the sukya ties a knotted cord round the legs, arms, breast, or neck of the patient, and the latter must abstain from the use of certain food, from salt and chili pepper, and observe continence for as many days as there are knots in the cord.

The cure proper consists in whistling over the sick person, blowing tobacco smoke over him, and massaging and sucking the afflicted body parts. The sukya purifies the drinking water, or any other beverage intended for the patient, by exposing it to the dew for some time, and then blowing into it with a bamboo rod or a tobacco pipe so as to produce bubbles. Painted sticks of hardwood are stuck in the ground around the bed of the sick person in order to keep evil spirits away. The sukya walks or dances around the sick bed, singing or muttering mysterious and incomprehensible words which are supposed to belong to the "spirit language." If a remedy does not seem to do any good, the sukya tries another one, just as does his learned confrère in more civilized countries.

Nobody must pass to windward of the house where the patient is undergoing a treatment, as one would kill the latter by "robbing him of air and breath." Should these orders be trespassed the sukya will exact a fine from the guilty ones. A woman *encinta* or with an infant must also keep out of sight as she might cause the death of both patient and sukya; these same restrictions apply also to any person of either sex having assisted shortly before at a burial.

Should the sick person not become any better, or even die eventually, the sukya will claim that his instructions had not been carried out carefully. Generally he ascribes such a calamity to disobedience in food restrictions. The actual or presumed breach of the above-named injunctions affords a convenient loophole for lack of success in the treatment.

Surgical operations are sometimes practiced by the sukya with the aid of splinters from broken glass bottles or bones, and chips of flint or obsidian. As antiseptics he uses ashes, tobacco, beeswax, and gums from certain trees.

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If the illness is not of a serious nature the sukya may cure it without seeing the patient. In such cases the remedies are administered by a third person, after having been "treated" (M.: *yabakna*) by the doctor by the usual methods of incantation.

The above-mentioned modes of cure are practiced by both Miskito and Sumu. The Sumu sukya also anoints the afflicted part of the sick in the form of a cross with a few drops of blood obtained by making a small incision under the tongue of a healthy virgin or boy with the aid of a prickle or thorn.[86]

Many sorcerers apparently believe in the efficacy of these methods, and they will practice these incantations over their own relations; when sick themselves, they will submit to such a treatment by one of their confrères. An old Miskito sukya from Rio Patuca, however, admitted to the writer that he practices all this hocus-pocus solely in order to keep the people in fear and thus be able to collect the fee.

TREATMENT OF EPIDEMICS.—In case of a very complicated and lingering disease or an epidemic the patients are isolated in provisional ranches built a short distance away from the village, in order to prevent the sickness from spreading. Green bushes or weeds are burned, and the heavy wreaths of smoke given off are supposed to act as a disinfectant. A bird or horselike figure (M. and S.: *dikutna*) is made by the sukya with sticks, leaves, clay, or wax, and he manages to lock the disease up therein after prolonged incantations. Once inside, the evil becomes incandescent and it is taken far away from the village, so that it can no longer harm the inhabitants. But should the sickness be very obstinate, the sukya orders the removal to another locality, and the infected village is burned to the ground.

CONVALESCENCE.—When the sukya has expelled the evil spirit and the patient is on the road to recovery the sukya organizes a feast to which all the inhabitants of the settlement are invited. Food and drink are offered to them. The custom is limited to the Miskito, who call this feast *pai*, a word which the Sumu apply to the sweet potato (M.: *tawa*).[87] It takes place on the eve of the day on which the patient is to leave the house of the sukya and return home again. The latter organizes everything, but all expenses are borne by the patient, who, however, has still to observe a strict diet and is not allowed to partake of any food or drink served to the guests. The feast lasts until daybreak, and no one is allowed to leave before that time, otherwise the disease with which the convalescent person was afflicted will be transferred to him. For some time after his recovery the patient's food is first brought to the sukya, who purifies it by

[86] Oviedo stated that the inhabitants of Chontales (Nicaragua) made blood offerings by piercing their tongues.

[87] It is of interest to note that according to the traditions of the Carib the spirits of the bush have a marked aversion to sweet potatoes (*Ipomoea batatas* Poir).

1: Conzemius M-4, 5 (1921) 1932
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whistling and blowing over it for about 5 or 10 minutes. Should he suffer a relapse and undergo another treatment the sukya will demand another fee.

RELIGION: SUPREME BEING, TRIBAL HEROES, SPIRITS, CREATION OF MAN, DELUGE, CHRISTIANIZATION

SUPREME BEING.—The religious system of these tribes has been fast disintegrating for the last generation. Nowadays both tribes believe in the existence of a Supreme Deity, which the Miskito call *Wan-Aisa*, "Our Father," and the Sumu *Ma-Papak* or *Ma-Papaiki*, "Our Father" or "Sun-Father." Both tribes also make use of the name *Dawan*, "Master" or "Lord." This conception has probably been borrowed from Christianity; still Exquemelin (Engl. ed.: 251) states that in his days (1671) the Miskito believed in one God. This Deity, which dwells in heaven, is sometimes confused with the various tribal heroes. According to these Indians, God has created the world and the inhabitants, but He does not appear to worry a great deal about the individual being, nor is He able to ward off the various dangers which continually menace mankind; consequently He is not honored with offerings, prayers, worship, or sacrifice. Furthermore, He lives so far away from earth that it is impossible to enter into relations with Him, and He can not be approached by man.

MINOR GODS AND TRIBAL HEROES.—Both the Miskito and the Sumu believe in the existence of a number of supernatural beings, living formerly on earth like man. These are the sun (M.: *yu, lapta;* S.: *ma*), thunder (M.: *alwani;* S.: *alwana*), moon (M.: *kati;* S.: *wiiko*), rainbow (M.: *kumadora;* S.: *wayauli, wayuli*), stars and planets (M.: *slilma;* T., P.: *yala;* U.: *ma-baka* "small sun"), the Pleiades (M.: *pupu-wihta;* S.: *kalpas*). According to a Sumu myth a bright planet, called by the Miskito *kati-maya*, "the moon's wife," which is seen just above the new moon, was originally a girl, who was raised by her finger tips by *Uda*, the moon god (Heath, c: 77). These various heavenly bodies are supposed by the Sumu to travel in canoes, a belief which is also held by the Cuna of Panama.[88]

Some of these supernatural beings are in charge of the elements and are responsible for the great calamities which appear occasionally. The god of the wind and of the air, called by the Miskito *Prahaku* or *Aubiya*,[89] sends the hurricanes and the great inundations which destroy the plantations and kill the livestock. His representative is

[88] Erland Nordenskiöld, Les Rapports entre l'Art, la Religion, et la Magie chez les Cuna et les Choco. Journal de la Société des Americanistes de Paris, tome XII, Paris, 1920, p. 150.

[89] Cf. "obi" or "obeah," a species of sorcery practiced among West Indian Negroes.

1: Conzemius M-4, 5 (1921) 1932
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278 Camotillo is the Spanish name for a tuberous plant, said to be not unlike the sweetpotato vine. It is supposed to grow in a wild state in certain regions of the Mosquito Coast, in the neighborhood of the rivers, but it is known only to few persons. The tuber is dried in the sun and reduced to a fine powder by a very laborious process. After pulverization it is introduced into the food or drink of the intended victim. Death will set in after exactly as many days as the tuber in question had been extracted from the soil at the time of administration.

The Ladinos believe that many Miskito and Sumu are acquainted with this manner of disposing of an enemy, but I was unable to obtain from these Indians any reliable details pertaining to the plant. All my Indian informants denied knowing it. In 1919 the candidates for president and vice president of Honduras died several months previous to the election, and the ignorant people of that Republic ascribed their deaths to the administration of camotillo by adherents of the rival political party.

753 754 WITCH POISON.—Many Indians believe that poison can be wafted through the air to the intended victim. The fear of "buried poison" has been introduced among the Miskito by Negroes from British Honduras and Jamaica, who have settled at the coast. In fact the Miskito of Rio Coco and Honduras nowadays ascribe disease not so much to the mischief of evil spirits as to the presence of buried poison in the neighborhood of the sick person's house. This poison is supposed to have been hidden there by one of his enemies with the object of causing him to fall into some lingering disease, as dysentery, and eventually to die. Such poison, which is generally inclosed in a bottle, is said to soak through the cork, spread to the surface, and then cause disease to all the people in the neighborhood.

755 When after the administration of different remedies there is no improvement in the condition of a sick person, a "poison doctor," that is, a sukya skilled in the discovery of such witch poison, is called. The latter, upon his arrival, takes a little walk around the house, and then pretends to smell buried poison in the neighborhood. He promises to take it out if everyone in the settlement will give him a small amount of money. As the presumed bad effects of such buried poison will gradually spread to the whole village, everyone will pay his share, and the following day the sorcerer promises to do the needful. In the meantime, generally during the night, he buries a small flask of a dark liquid near the house of the sick person. In the morning the entire population of the village is present in order to witness the extraction of the source of the illness. After searching the vicinity of the house for a considerable time the sukya finally walks to the spot where he buried the small bottle during the night, and then triumphantly shouts: *Nara sa* "Here it is." He shows the

1: Conzemius M-4, 5 (1921) 1932
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liquid to the people present, but none of them dares to inspect it, not being immune from its effects as are the poison doctors and the foreigners. During the last two decades the fear of buried poison has spread to the Tawira-Miskito and to the Sumu; these Indians believe that the Miskito from Rio Coco are especially dangerous on account of their habit of killing their enemies with the aid of buried poison. Certain charms, as, for instance, the bitter antidote bean (*Fevillea cordifolia*), are occasionally carried to ward off the effects of such witch poison. 755

DREAMS.—The Indian pays great attention to dreams (M.: *yapri sáuhkan;* T., P.: *amana;* U.: *amiñna*). When he dreams that he has killed plenty of game he is certain to have good luck in the chase on the following morning. If he dreams of an accident he refuses to leave the settlement during the next few days. When he dreams of strangers, he expects a visit in the near future. The sukya, while curing a sick person, invokes friendly spirits in order to obtain from them during the dream information regarding the nature of the illness. 787

HAUNTED TREES.—The silk-cotton tree (see Religion, etc.) and the various species of figs (*Ficus* sp.), especially the giant chilamate or higuero, are said to be haunted. The Indians and Creoles believe that these fig trees flower only during the night and hold the fig to be the true fruit. Any one daring to go under the tree about midnight will be able to see the blossom and after that will be favored with good luck in anything he may attempt. This belief is shared by the ignorant Ladinos, who claim that the fig trees flower only on Good Friday night and that a blanket spread under them at midnight will be covered with small blossoms on the following morning. 824 [777]

MAGIC AND SORCERY: SUKYA, OKULI, SPIRITIST, OBEAH OR VOODOOISM

SHAMANS IN GENERAL.—Among these credulous people a great influence is exercised by the shamans, of which there were formerly only two categories, the *sukya* and the *okuli*. Of the latter there should be only one at a time, but of the former there is one in almost every larger village. In recent years two other sorts of shamans, the *spiritist* and the *obeah man*, have appeared on the coast. 756

These shamans play a great rôle in the life of the Indians, for they act as medicine men, doctors (see Hygiene: Diseases and their cure), augurs, conjurers, magicians, wizards, diviners, rain makers, spell-binders, priests, preachers, teachers, guides, advisors, counsellors, depositaries of tribal traditions, and the like. Their opinions were formerly of the greatest weight in tribal assemblies. Still, there is nothing characteristic about them in the way of ornament or dress,

1: Conzemius M-4, 5 (1921) 1932
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756 catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

794 THE SPIRITIST.—A new movement, not unlike the nyalism among
786 Jamaican Negroes, has appeared among the Christianized Miskito during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito
[155] as *pirit-uplika* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

754 OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

2: Kirchhoff E-4 (no date) 1948
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773 same way that manioc is planted. Some of the tribes recount a myth of a
776 great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

775 The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

776 The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with
789 innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

756 Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may
● 755 succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs
[778] knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

756 A shaman may also prophesy the future or determine the route hunters
[787] should take in order to find game. By conjuring, a shaman may cause
[754] harm to come to people. A shaman may be retained by a person to eliminate an enemy.

1: Conzemius M-4, 5 (1921) 1932
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wood or hombre grande (S.: *wanabaka*) is said to be efficacious in case of snake bites.

The woody rootstock of the China root or cuculmeca, a sort of French brier (S.: *samaldi*, *wasalanaka*) is boiled in water and the decoction is used to clean the blood, and as a preventive against snake bites.

The small "beans" contained in the pod of the pissabed or frijolillo shrub (M.: *sitsitsnya*) are toasted, ground, and used as coffee on account of their diuretic properties; the root of this plant is employed in malarial fever.

The large round leaves of the cowfoot or Santa Maria bush (M.: *sikatara*; S.: *kalamata*) enter into poultices for a swelling of the flesh, while spider webs are applied to wounds in order to stop bleeding. Wild honey is also used in medicine.

PRESUMED CAUSE OF DISEASES.—The cure of the sick is practically always left to the sukya; the latter is generally a clever herbalist, and the treatment applied by him is often excellent, but the remedy in itself is considered of no avail unless certain rites are observed by the healer as well as by the patient.

According to these primitive people, indigenous diseases and accidents are always due to the agency of some evil spirit (M.: *lasa*; T., P.: *walasa*; U.: *nawal*) under whose power the sick person is supposed to be. The mischief-maker may send a snake or a jaguar to harm the intended victim, or cause a tree to fall upon him, or cause his canoe to upset, or bring about some other calamity and ill luck. Thus toothache is supposed to be caused by a worm (M.: *sûkri*, *sisi*) that has been sent by these evil powers to bore the tooth. People walking in their sleep are said to be possessed by demons. Epilepsy is also caused by the temporary possession of the individual by such evil spirits; hence fits are called by the Miskito *wisna prukaya* "to be beaten by the devil." For the cure of this disease a decoction prepared from the *kisauri* herb is said to be very efficacious.

This evil influence may be counteracted through the agency of the sukya who manages to exorcise the spirit from the sick and then brings about a complete cure.

DIAGNOSIS.—Through the use of narcotics, especially the excessive use of tobacco, the sukya throws himself in a condition of wild ecstasy, and goes into trances and hypnotic states. During such an abnormal condition he is supposed to be in relation with friendly spirits whom he had invoked previously, and who reveal to him the source of the illness and the mode of cure.

HEALER'S INSIGNIA.—The insignia or kickshaws of a sukya during a cure are three or four black hardwood sticks with carved heads and several magic stones and dolls or manikins of white tunu cloth. Stone axes, which are regarded as thunderbolts, figure also among the

1: Conzemius M-4, 5 (1921) 1932
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paraphernalia of these doctors, small specimens being considered more efficacious than large ones. One of these celts is wrapped around the aching part of the body in order to relieve pain. In case of stomachic troubles the sukya administers drinking water wherein such a celt had been deposited for some time.

TREATMENT.—The sukya heals generally in the dark, especially after sundown. His methods of approach are prescribed by custom. First he imposes a general fast or perhaps only minor restrictions in diet on the patient, and occasionally on some of the latter's near relations likewise. Food which the patient is allowed to eat is known as *byfinka* (M.) and *kuñ* (S.). Sometimes the sukya ties a knotted cord round the legs, arms, breast, or neck of the patient, and the latter must abstain from the use of certain food, from salt and chili pepper, and observe continence for as many days as there are knots in the cord.

The cure proper consists in whistling over the sick person, blowing tobacco smoke over him, and massaging and sucking the afflicted body parts. The sukya purifies the drinking water, or any other beverage intended for the patient, by exposing it to the dew for some time, and then blowing into it with a bamboo rod or a tobacco pipe so as to produce bubbles. Painted sticks of hardwood are stuck in the ground around the bed of the sick person in order to keep evil spirits away. The sukya walks or dances around the sick bed, singing or muttering mysterious and incomprehensible words which are supposed to belong to the "spirit language." If a remedy does not seem to do any good, the sukya tries another one, just as does his learned confrère in more civilized countries.

Nobody must pass to windward of the house where the patient is undergoing a treatment, as one would kill the latter by "robbing him of air and breath." Should these orders be trespassed the sukya will exact a fine from the guilty ones. A woman *encinta* or with an infant must also keep out of sight as she might cause the death of both patient and sukya; these same restrictions apply also to any person of either sex having assisted shortly before at a burial.

Should the sick person not become any better, or even die eventually, the sukya will claim that his instructions had not been carried out carefully. Generally he ascribes such a calamity to disobedience in food restrictions. The actual or presumed breach of the above-named injunctions affords a convenient loophole for lack of success in the treatment.

Surgical operations are sometimes practiced by the sukya with the aid of splinters from broken glass bottles or bones, and chips of flint or obsidian. As antiseptics he uses ashes, tobacco, beeswax, and gums from certain trees.

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and they are not to be distinguished in their outward appearance from the ordinary mortals.

According to Miskito traditions their art was introduced by a white man from the east, known as *Almuk-awra* (lit.: "old drift man"), who was apparently some sort of culture hero. This reminds of the Mexican myth dealing with *Quetzalcoatl*, who also came from the east and was likewise a shaman. The first Sumu shaman is said to have been a man named *Ado* or *Mamaŝ* [80] (Grossmann, b: 4).

THE SUKYA.—This is the name of the lowest of the two kinds of sorcerers found originally among the Miskito and Sumu. The name is also current among the neighboring tribes, as the Paya and the Rama, although the indigenous designations for the priest-doctor in these two languages are respectively *wata* and *turmala*. The term sukya (sukia, suquia) [81] is also employed by the Mova and the San Blas Indians of Panama, and likewise occasionally by the Talamanca of Costa Rica. In the dialects of the Talamanca region, however, the native name is *tsukur* (or *tsugur*, *tsugru*, *tsugrūk*, *tsuku*). In the various Costa Rican languages the elements *tsu* or *ču* mean "to drink" or "to suck," and they occur in words which may be translated by "milk," "female breast"; this is also the case with other Central American languages, as Maya-Quiché, Paya, Mixe-Zoque, Lenca, Xinca, Sumu, and Guaymi-Dorasque. It would appear, therefore, that the word sukya is etymologically related to the above terms, and that originally it meant something like "sucker," as the native medicine man extracts the material cause of the pain or ill being by the action of sucking.[82]

The sukya is generally a man above the average Indian in intelligence.[83] His office is generally hereditary, but frequently he is succeeded by his nephew or his son-in-law. In practically every large village of the Miskito and Sumu habitat there is a sukya to be found; Wickham (c: 207), however, did not observe any such sorcerer among the Ulwa of Rio Escondido. The sukya communicates with the unseen powers [84] and may use his art to the welfare or destruction of

[80] *Mamaŝ* is, however, the Sumu name for "mother."

[81] The first mention of this name is found by M. W. (300, 302, 304, 306, 307, 308, 309) in the form *succhea*.

[82] See Rudolf Schuller, Las Lenguas Indígenas de Centro América. San José de Costa Rica, 1928 (pp. 53–54).

[83] Occasionally the sukya is an elderly woman. A young woman is, however, not qualified for this office, as she would be exposed too much to the influence of evil spirits and other supernatural dangers, especially at the menstrual period and at childbirth.

[84] Dampier (I, 9) already states that the devil, called *Wallasaw* (=*walasa*, *wlasa*, or *lasa*) by the Miskito, appears to their priest when they desire to speak to him on urgent business. M. W. (308), who writes a little later, that is, about 1699, spells that word *wallasee*.

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ordinary mortals. Thanks to these supposed powers, he is feared and respected far and wide. Such a state of affairs is occasionally very injurious to the Indian community as a whole, but in general abuses on the part of the sukya are not common. 756

Besides curing the sick, the advice of the sukya is sought in many instances. He is consulted in order to find out the whereabouts of a lost or stolen object, and he furnishes remedies to cure ill luck, to influence the heart of a person of the opposite sex, to increase the valor and courage of a man, and the like. He will inform the hunter how to proceed in order to secure plenty of game, for he has generally a good knowledge of the instincts and habits of animals. If he is unsuccessful, he claims that his client has transgressed some prescription. 756 787

Some of these shamans have some knowledge of astronomy; others imitate the voice of other persons or of animals and birds, and some appear to be clever ventriloquists. They foretell the death of a sick person, and help artificially by means of poison on the specified day, in order to strengthen their reputation. 756

The sukya will also be asked to harm an enemy by casting an evil spell over him. The usual method followed by the Miskito sukya is to fire a gun in the direction of the person upon whom he wishes to inflict injury. His Sumu confrère will send disease or death by mistreating or stabbing an object, usually a doll or puppet (M.: *yapti;* S.: *ditaina*), made of white tunu bark, and supposed to represent the intended victim. Some of these sorcerers are also said to transform themselves into a snake or jaguar and then harm their enemy. 756 754

There are good and bad sukyas, who are sometimes at feud with each other. In his own village the sukya is generally said to be good, but in the neighboring settlement there is a bad one, whom he has to fight and send away the evil spirit which the latter despatches in order to cause disease and death. The bad sukya will, for instance, send an animal or bird with poison to the neighboring village, but his confrère from the latter settlement sees it coming and sends it back. The animal goes hither and thither, until finally the "stronger" of the two opponents wins.

INITIATION OF THE SUKYA.—The choosing of his career by the sukya is supposed not to be voluntary. A person whom destiny has picked out for this high office is said to come under the influence of some spirits, from whom he is unable to deliver himself. During the night he acts like an insane person; he gets up from bed and talks with invisible beings in a mysterious "spirit" language. 756 776

In this state he makes prophecies, and if these come true his friends will urge him to become a sukya. He then prepares himself for his career through fastings, vigils, and other means of achieving exhaustion and the novice will be reduced to a skeleton. During this

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time he will come under the influence of some sort of tutelary spirit which henceforth will act as his protector; this may be the spirit of a person, animal, plant, hill, cloud, star, etc., or some other kind of supernatural being, by whose intermediacy the would-be sukya may converse with the evil spirits. This conception of guardian spirits is found in large areas of America, and it has probably not originated from the tutelary angel of the missionaries.

The candidate is then ready to exercise his profession, but on the day of initiation his food must be prepared according to a manner prescribed by custom. It must be cooked by a young boy or girl, not yet arrived at the age of puberty; a slender hardwood tree, called *liwoñ*, which grows very sparsely in the forest and burns readily in the green state, must be used as firewood.

The sukya is obliged from time to time to strengthen his powers by religiously abstaining from certain food and sexual intercourse, and in other ways lead a life of self-denial.

Among the Sumu any candidate for priestly and medical honors must perform the fire dance; this fiery ordeal must also be repeated occasionally in order to strengthen the connection with the unseen powers. A big pile of *liwoñ* wood is made in a cleared spot in the bush and the whole is covered by a thick layer of bijagua leaves. Fire is then put to the whole, and when in full blaze, the sukya issues from the forest. He has the whole body smeared with black paint, and is entirely naked save for a loin cloth. He then walks upon the pile and remains there standing quietly until the wood is partly consumed. Then he orders the fire divided into four parts, and walks from one pile to the other with his bare feet until all the wood is burned. Strangers are never allowed to witness this performance. The Miskito greatly respect the Sumu sukya for this act which their own sorcerers are unable to perform.

Roberts states that the fire dance is also done by the sukya of the San Blas Indians (Panama), and that the effects of the fire are resisted by some powerful antidote extracted from vegetable fibers. This ordeal is also performed by the shamans of Raiatea (Society Islands), Kandavu (Fiji Islands), and of a tribe in British India, but it has apparently not been observed in other parts of the world.

THE OKULI.—The okuli[85] is the highest shaman among the Miskito and there never should be more than one at a time. The Sumu do not have any sorcerer ranking above the sukya, but many of them recognize the okuli of the Miskito.

The okuli is said to be a special representative of *Alwani*, the thunder-god, or of *Aubiya* (or *Prahaku*), the lord of the air, and is supposed to control the elements. He is much more powerful than

[85] Among the Bribri Indians of Costa Rica *oko* is the name for a sort of shaman.

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the sukya, and he does not require the four black sticks, indispensable to the latter, while curing the sick. His powers are imparted to him, while in a state of unconsciousness, after having been struck by lightning. He is then able to make prophecies and to give other proofs of his aptitude for the high office, whereupon the prominent sukyas acknowledge him as their okuli. It is not absolutely necessary for him to have been a sukya himself. 756 ●

The last true okuli lived at Kum, a large Miskito village on the lower Rio Coco, where he died about 1895. He was known by the name of *Pase-yupti* "Mother (or Goddess) of the Wind," and I was unable to learn his real name. Shortly before his death he said that Lauro, the present okuli, was to be his successor. The latter had not actually been struck by lightning, but lightning had struck into a coco palm adjoining his house in Sandy Bay, and he personally became unconscious as a result of the fright. Lauro was still a member of the Moravian Church in those days, and for that reason he refused to accept the office offered to him upon the death of *Pase-yupti*. But finally, yielding to the pressure from the heathen Miskito, he began to assume the duties of the okuli. Lauro, however, resents the latter name, for he pretends to be a good Christian; he calls himself merely "prophet," and ascribes his supernatural powers to the grace of God.

Lauro is a very pleasant man, who was about 55 years old when the writer visited him in Sandy Bay in 1921. He has a slight admixture of Negro blood, but pretends to be a pure Miskito Indian. According to Mr. Danneberger, the Moravian missionary at Sandy Bay, he leads apparently a very clean and moral life. Although excluded from church membership, he frequents the Moravian church at Sandy Bay, and insists upon all his relations doing the same.

It is claimed by the Indians that Lauro has to quench his thirst exclusively on coconut water, and that a big flood would come and inundate the whole country should he ever take a single drop of ordinary water. Every year at the beginning of September he holds a day of prayer, when no one is allowed to travel nor to do any outside work. He then repairs to the sea at Sandy Bay, accompanied by a small child, and wades into the water up to the waist, praying and offering food to the elements, in order to keep them under his control. Every year his agents travel all over the coast to the Indian villages in order to collect money for Lauro, and many of the Christianized Indians pay the small amount asked for, so that the "prophet" should continue exerting his influence to keep hurricanes and floods away from the country. No Indian dares trespass his orders, and even some white foreigners have paid money to his agents.

When the Indians from Sandy Bay wish to undertake a voyage to the neighboring Mosquito Cays in order to catch turtle, they first consult Lauro with regard to the weather and the outlook for a good

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catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

THE SPIRITIST.—A new movement, not unlike the nyalism among Jamaican Negroes, has appeared among the Christianized Miskito during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito as *pirit-upliku* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Sicuque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

A shaman may also prophesy the future or determine the route hunters should take in order to find game. By conjuring, a shaman may cause harm to come to people. A shaman may be retained by a person to eliminate an enemy.

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526 staff play. The object of the game is to see which can keep up longest the continual strain upon the muscles of the arm, and ultimately strike the staff from the hand of the other."

HYGIENE: DISEASES AND THEIR CURE

515 Most of the Indians keep themselves very clean and take a bath twice a day in the river adjoining their settlement. As they wear but little clothes this is a very simple operation with them; they keep their body cleaner than do the lower class of the Ladinos, or of the white race in Europe, where the clothes are frequently the main source of dirtiness.

514 When the Indian goes to stool he always takes to the water, drifting down the river until he comes to a secluded spot, where he can perform this operation in privacy. When finished he cleanses the body with water.

515 The presence of dogs and pigs in the huts is responsible for the great quantity of fleas to be found there. In spite of the great care devoted to the hair, the latter is frequently full of vermin, and it is not an uncommon occurrence to see at the villages rows of women picking off one another's lice and crushing the troublesome insects between the teeth—a most disgusting sight.

MALARIA.—A swelling of the spleen and anemia are common 164 enough and are undoubtedly the result of malaria (M.: *wrih*; T.: *wara*, *warai*; P., U.: *yuma*, *yumah*),[44] which is endemic in the lowlands, although rarely fatal. The transmitting agent of malaria is a mosquito of the genus *Anopheles*, which is very common.

● 751 For malarial fevers infusions from the bark of certain trees are administered, especially that of the copalchí (*Cinchona* sp.). Instead of sudorific bush medicine, quinine is also administered nowadays. The fever or lemon grass (*Andropogon nardus* L.) is also used for this purpose. The sudorific is followed by a steam bath. The stricken person is enveloped in tunu blankets, and water is thrown on some large heated stones placed at his feet; he then inhales the thick vapor or fumes produced thereby. This part of the treatment is excellent, for it induces perspiration; but as the patient is then taken to the riverside and forced to take a cold bath pneumonia is often the result.

Among the Sumu the patient is carried to one of the numerous hot springs (*dolo*) which abound in their territory, and immersed therein, or he is buried up to the armpit in the hot sand at the edge of the pool.

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[44] These names were formerly used by both Miskito and Sumu as a general term for most other maladies, but nowadays the Miskito have adopted the word *siknis* (Engl. "sickness") in the latter sense.

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will be known as *kyaki yumu-ka*. The Sumu have apparently taken this belief from the Miskito, and they have no distinctive name for the ill; the Rama of Nicaragua call it *yakubi*.

The sukya cures this illness after its source has been revealed to him in dreams, for the treatment differs slightly according to various animals which have caused it. But in all cases the belly of the patient is strongly massaged with animal grease (also vaseline, coconut oil), while the sukya keeps on continually a low whistle in order to induce the spirit to depart. Among the Christianized Miskito there are also some people who heal *yumu* by similar methods; they are known as *yumu yabaka upliku* "people curing yumu."[86]

Women *enciente* may occasionally suffer from *kwihra yumu-ka* "pregnancy yumu"; the child is supposed to die then invariably, unless the sukya applies a treatment.

OTHER INDIGENOUS DISEASES.—Dysentery (M.: *taldura;* S.: *ba-pau*) occasionally appears in the form of an epidemic; it is generally cured by the administration of an infusion from the bark of the nance tree (*Byrsonima crassifolia* H. B. K.).

To cure diarrhea (M.: *byara plapaya;* T., P.: *ba lanin;* U.: *bawas lanaka*), the favorite remedy is an infusion prepared by boiling the bark of the mountain guava tree or the seed of the zapote or monkey apple. The Sumu also boil the rootstock (M.: *labu;* S.: *sara*) of the black or Ulwa banana.

According to the investigations carried on by the Rockefeller Foundation, hookworm is found on about 75 per cent of the Indian population living around Matagalpa. There is no doubt that it is also common among the Indians of the Mosquito Coast. Hookworm is seldom fatal, but there is progressive anemia and frequently interference with mental and physical development, causing occasionally premature death.

Children especially seem to be infected with intestinal parasites, as may be seen from their color and their enormously swollen belly; this is largely due to their habit of eating earth, charcoal, and the like.

Rheumatism (M.: *kyaia lâlwaya, dusa lâlwaya;* S.: *wakal dalanin, wakal dalanaka*) is supposed to be caused by thorns or fishbones which have been introduced into the flesh by evil spirits. The sukya pinches and kneads the afflicted spot, then makes a small incision with a glass splinter and, applying his mouth to the wound, he sucks a little and finally produces a prickle or bone, which he had carefully hidden between his teeth.

[86] Zlock (162) gives *yumuk* as the Miskito name for a native doctor curing with medicines. In the Carib dialects of Surinam and adjacent regions *yumu* is the name for some sort of spirit.

[i.e. yumu, or stomachache, see cat. 116, PA 119-20 – Analyst]

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Wickham (b: 160–161; c: 205) states that the Ulwa used to cure pains in the limbs by flogging the aching part with a kind of nettle, until the skin became raised in bumps. 164 757

A disease of the eyes, perhaps trachoma, called *ūkri bāikan* by the Miskito, is prevalent; it does not produce total blindness, but causes great pain. Foreigners appear to be immune to it. 164

Venereal diseases, as syphilis (M.: *māirmanka;* S.: *pilāu*) and gonorrhea (M., S.: *iskadora*), are only met with in the larger villages at the coast. Anthropologists and the medical world seem, however, to agree now that syphilis is of American origin.

Yellow fever likewise is undoubtedly of New World origin, and was formerly endemic in certain parts of the Central American lowlands. In the sparsely populated country under consideration, however, no authentic case of yellow fever has been recorded. Perhaps the transmitting agent, a species of mosquito (*Stegomyia fasciata* syn. *Aëdes* sp.), is absent. Black water fever is also unknown. Leucorrhea is, however, very common. Indians suffer seldom from hemorrhoids (M.: *slabla dāiwaya;* S.: *sarani putulnin, saraka putulnaka*), which swelling is prevalent among whites residing in the country.

Foreign diseases.—Europeans have introduced among the Indians a number of distressing maladies formerly unknown to them, and against which they had not the slightest immunity. Although strong and robust, the Indians are especially subject to infections by the germs of diseases generated by large communities. 164 177

Epidemics of our common catarrh (M.: *syahka;* T., P.: *ohdana;* U.: *naūtak iwanaka*) have occasionally caused great havoc among the Indians of the interior.

Whooping cough (M.: *ikya;* S.: *duk*) appears occasionally as an epidemic among children, whereby many of them die.

Influenza or grippe also occurs periodically as an epidemic. It seems to have been brought to the country for the first time in 1807–08 by some Miskito returning from the logwood and mahogany camps of British Honduras. Consumption is also found sometimes, especially among the Sumu.

Measles and smallpox were brought to the New World by the first conquistadores and facilitated the subjugation of the Indians. Epidemics of measles (known by the Spanish name "*sarampion*") are responsible for many deaths; this disease was already observed at Cabo Gracias a Dios among the Miskito during the latter half of the seventeenth century (Exquemelin, French ed.: II, 277). Smallpox has on different occasions decimated entire villages, but since the middle of the nineteenth century has not appeared on the Mosquito Coast. Wickham (b: 204–208) gives an account of the

 last epidemic of Asiatic cholera which swept the country in 1867 and 1868.

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Mixed Worm Infestation in 100 Children From Zapuca and Waspam (Coco Basin)
Nemathelminthes

Age of Child	*Number of Children Infected*			
	Ascaris Lumbricoides	*Enterobius Vermicularis*	*Trichuris Trichiura*	*Necator Americanus*
5—10	56	31	60	10
10—15	21	16	56	13

Trichuris trichiura infestation was common throughout the population. However, as the children become older, and among adults, there was a decreasing incidence of infestations, other than Trichuris, proportionate to the age of the individual. It is presumed that as age increases the subjects are more careful about their habits and the ordinary methods of re-infection are reduced.

757 164 In treating intestinal parasites, the Indians use numerous decoctions made from tree barks. As far as can be ascertained the brews act mainly as cathartics and are not, strictly speaking, vermicidal. The effect of violent catharsis is two-fold. First, there is the psychological effect of direct action of the therapeutic of reducing a swollen abdomen and the consequent relief from distension or constipation, and second, there is a diminution in the quantity of parasites, since many were removed by cathartic action. The Indians, however, prefer our methods for treating intestinal helminths and seek such treatment whenever available.

THE INFECTIOUS DISEASES OF THE COCO BASIN

Yellow Fever

164 Carter's investigations[71] have revealed that yellow fever was a disease brought to the New World from Africa. The first epidemic occurred in Yucatán in 1648. Since then numerous epidemics of yellow fever have been described; the distribution of the disease and dates of occurrence have been listed by Hirsch.[72]

As far as could be determined yellow fever has not been reported from the eastern coast and the interior of Nicaragua. Dr. Thaeler, at Bilwas Karma, has never seen a case in this area and other investigators have suspected it in this region but were unable to discover its presence.

[71] Carter, H. R. Yellow fever: an epidemiological and historical study of its place of origin. 1931. Baltimore.

[72] Hirsch, August. Handbook of geographical and historical pathology. 1883. Vols. I and II. New Sydenham Society, London.

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[164] sease debilitates the population, reduces the activity and energy of the workers, depresses the intelligence of the children and diminishes fecundity. Since the Miskito coast abounds in mosquitoes especially those that carry the disease, it is only reasonable that malaria constitutes a major public health problem of the area.

In the Coco Basin, most of the inhabitants are either in the throes of malaria, in a period of remission or have had the disease: the exact status being difficult to differentiate. A swelling of the spleen, anemia, fever are most commonly attributed to malaria *(Wrih)*. For malarial [751] fevers the bark of certain trees are administered, particularly copalchi *(Cinchona sp.)* The stricken person is enveloped in *tunis* blankets with hot stones placed at his feet, forthwith he is often taken to the river and given a cold bath.

The high incidence of malaria is due to two reasons, the first being the large numbers of anopheline mosquitoes capable of transmitting the disease and secondly the numerous sources of host reservoirs for the parasite. Thus the infected and the infectors are numerous. The higher death rates (impression) occur among the very young and the aged. At San Carlos the death rate from malaria, between the ages of 2 to 10 years of age, is approximately 12 per cent. Most of the [166] aged, we were told, died of fever and the older people on occasion sing this chant:

[539] *"The fever returns and I shall die. I drink medicine put it on my body. The fever will kill me and I shall die. The medicine does not help me. I have been good to my family. I have had the fevers. This time it (the fever) will take me."*

[22] Our investigations were primarily directed to children because they, not being at work, were easier to secure and examine and it was easier to determine exactly the incidence of autochthonous malaria in each locality. Furthermore the children rarely leave the community and among them are fewer imported cases. However certain of the older people were examined and these are included in this report.

Children according to Brumpt[46] may be considered as a reservoir of the disease. If such is the case, then, San Carlos community becomes an ideal location for the preservation and increase of the disease. The possible reason for the lower incidence of malaria at Saulpaca is that within a few miles of this community Dr. David Thaeler maintains his clinic and hospital. Thaeler has furthermore been instrumental in teaching the people the principles of swamp drainage and malaria control. It would be reasonable to expect that in

[46] Brumpt, E. Precis de Parasitologie, 4th ed., 1927, Paris.

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villages on the Coco River. In and around Waspam, San Carlos, and Bilwas Karma several cases were seen which appeared to have the stigmata of the disease. Dr. Daniel F. Molloy of the Rockefeller Foundation once informed Dr. George Shattuck [82] that yaws in Honduras and in Nicaragua occurred in "nests". It was our impression that the same can be said for syphilis. Several cases were seen in and about Bilwas that were being treated and although the disease does not present itself as a major Public Health problem within the Coco Basin it is important that it be treated since there is every likelihood that it will spread.

Yaws

Yaws is a common disease in the tropic regions of Central America and it is often seen in the subjects of the Coco Basin. There appears to be some evidence that Yaws was an ancient disease in the Americas. Hirsch [72] and Shattuck [82] agree that yaws was an importation from Africa. In a survey of a hundred patients at San Carlos nine of them yaws, three of the subjects were boys between the ages of 10 and 18 who had the typical secondary eruption of yaws. The other six patients had a mixture of annular tertiary lesions and chronic eruptions. Treponema was demonstrated in four of the patients. Although no formal survey was undertaken, Dr. Thaeler and others [80] had the impression that the disease was common in the area. The treatment of the subjects with mapharsen and bismuth salicylate results in a dramatic response, and at the end of the third weekly injection most of the lesions had disappeared. It would appear to us that a definite program could be established with regard to the treatment of yaws wherein a sustained effort in a field project could accomplish the treatment of the majority of the cases within a short period of time. Thus a team could enter into a territory and make a definite tour with a view of treating yaws. Although the disease would probably not be eliminated by such a measure it would no doubt be suppressed in its spread to a where it might considered a minor public health problem.

Pinta

The disease pinta is characterised by changes in pigmentation as a result of *Treponema Carateum* infection. Is is presumed to be of

[80] Rosenfeld, L. in his survey of March, 1943 found among 200 subjects at Raiti and San Carlos, 26 of them with yaws and 18 of them with Pinta and 2 with both diseases combined.

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primarily malaria, intestinal helminths, dysentery, and mycotic dermatoses and secondarily yaws, pinta, tuberculosis in mining districts.

The first suggestion towards amelioration is at least some understanding of the disease problems in an area and within that area of the peculiarities of a local situation. What for instance may offer a solution at San Carlos may not be exactly the case at Waspam. The second suggestion is to know the people with whom one is dealing. Their customs and ways are of utmost importance to a medical program. The physician should be a medical expert of society and if the society in which he moves is unable or unwilling to accept his methods then all of his efforts are in vain. If medical care is needed anywhere, the physician must adapt himself to the circumstances and provide health measures and services.

Among many Indian tribes, medicine and health are symbols the understanding of which belongs to the medicine man. He is a combination of sorcerer, priest and physician. It is only this combination that is satisfactory to the care of a society under certain circumstances. The sudden arrival of modern medicine in such a community does produce a conflict within the minds of the natives. How difficult it is to deal with persons within our own culture who for years have followed treatment dictated by popular belief, superstitions or views forced upon them by commercial interests. The field of patent medicine is a flourishing market and represents both inadequate and improper education of the public or the inability of the physician to cope with the social situation. The problem among native peoples is even more difficult and requires in the main a common sense approach towards human understanding based primarily in the recognition of feeling and sympathy for ones fellow-men. Observation, experience, experimentation and reasoning are the sources of knowledge.

The friendship of the people is to be desired and the cooperation of medicine men *(curandero, sukia)* is solicited. Wherever possible one is an aid to these people, working with them towards a gradual understanding of their problems. One collaborates with the shaman for he himself has a special role in society. Among the Miskito modern medicine is already known. The people understand the meaning of our anti-malarial drugs. Their own public health measures are fairly satisfactory and what is needed are specific control measures for certain diseases. This situation is peculiar to the Coco Basin and may differ elsewhere.

Since the medical, care of the Coco Basin people is limited, in the modern sense, to but one physician and since medical care is needed throughout the area it is obvious that we must adapt our method of

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759 rendering health service to this situation. Physicians, in general, find the territory unremunerative and as a consequence cannot be induced to venture or remain in that region. We are therefore confronted with the problem of adapting our method to the situation even though the procedure introduced may not be ideal.

For this reason Dr. Thaeler at Bilwas Karma has trained young men to act as agents for the central clinic. The men arrive at Bilwas Karma and undergo a serious series of lectures and demonstrations, then a period of internship and are forthwith prepared to carry out limited medical activities in the communities from whence they came. In this process of adaptation it is important that the trainee return to his original community, for his people know him, place trust in him, and adaption to a porgram is simplified. Furthermore the trainee is at ease with his own people, his prestige is increased and his relatives offer odequate security for his success.

K4 759 The diseases in which an empirical diagnosis can be made with a medicum of success are as follows: malaria; yaws; pinta; acute dysentery (presumably bacillary); chronic weaking dysentery; (presumably protozoal or helminthic); helminthes; and skin infections. The trainee is taught mainly in terms of these major diseases, first aid and rudimentary principles of child-bearing and pediatrics are secondary. The system ordinarily employed by the Indians in first aid is not to be condemned, obstetrics and pediatrics do not constitute subjects of sufficient public health importance to this region. The trainee is taught insect control measures and the use of certain specific drugs for the diseases just described. His medical supplies consist chiefly 278 of atabrine, oil of chenopodium, magnesium sulfate, sulfaguanidine, vioform, carbarsone, antiseptics, gentian violet pills, a few miscellaneous drugs such as aspirin and some first aid equipment. The trainee is taught to send many of the patients whom he regards as special cases to the hospital. There is a possibility that such a system may 010 succeed, particularily if the trainee or agent is brought back to Bilwas for refresher courses. The merits of the system result from one basic fact and that is that Dr. Thaeler is a well trained clinician with considerable understanding of these Indians. It seems highly important that such a program be directed only by a well qualified physician or physicians who have had special training in medicine as applied to societies of varying cultural traits. This fact has been recognized to some extent by the British in their various schools of tropical or colonial medicine and by the United Fruit Company. In other instances tropical medicine may be academically isolated from the societies who should receive the results. The mistakes made by young physicians,

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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalnin;* U.: *sumalnaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 763 [888]

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about. 761 ● 763

The female relations of the deceased cut their hair off; according to Bell (a: 255; b: 90) this is done under the idea that no one should handle it after the dead person. In former days the Ulwa Indians used to cut their hair off also at the death of their wife (Wickham, b: 208), but nowadays the men of both tribes always keep their hair cut short. 765

The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialize by pronouncing its name. [775]

1: Conzemius M-4, 5 (1921) 1932
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Poisoning is nowadays the usual method of disposing of an enemy. The poison is administered in rum or fermented drinks, with the aid of a third person, when the intended victim is intoxicated. This method of killing has been rather common in recent years. As poison the Indian uses some strong native drugs, alligator gall, or even cyanide stolen from the gold mines. The Miskito from Rio Coco are supposed to make frequent use of poison. If the Indian kills his enemy with the aid of a gun, arrow, or knife, he will have to follow him into death, but such does not appear to be the case when poison has been administered.

ADULTERY.—Morality is at a low ebb, particularly among the Miskito, and most of the disputes and crimes that occasionally take place are the results of quarrels about women. The injured husband inflicts a severe beating on his unfaithful wife or attempts to choke or drown her in order to make her tell the name of the other delinquent, from whom a payment (M.: *mâirin mana;* T., P.: *yal minit;* U.: *yal makalnak*) is exacted. Such a "woman payment" consists generally of a cow or a gun. Otherwise wife beating is not common. Occasionally a woman has committed suicide for having received a sound beating from her husband on account of her unfaithfulness, and the latter was then compelled to pay up to her relatives. Bell (a: 251) states that he had known men keeping wives for the sole purpose of the revenue derived from their misconduct.

DEBT.—If a debtor refuses to pay up or to return or refund the object or money borrowed, the creditor might go to his plantation and pay himself with provisions without risk of punishment. If such a debt can not be collected in an amiable way, the creditor, instead of wrangling with the debtor, might destroy some property belonging to a third person. Pressure is then brought to bear upon the debtor and he has to make good the damage done.

VARIOUS.—Sometimes an Indian who had been grossly insulted and was unable to collect payment would commit suicide, whereupon the offender had to do the same. This system led to complicated cases, and the following has been recorded by the Moravian missionaries. A Miskito woman, being continually mistreated by her husband, ran away from him. The latter then proceeded to the house of his parents-in-law, where he was told that his wife, unable to endure his barbarous treatment any longer, had hung herself. The man understood what that meant and committed suicide without hesitation. Then the woman, whom every one had believed dead, returned to the village. But now the relations of her husband wanted her to commit suicide also for having caused the latter's death by her flight from home. As the unfortunate woman hesitated, not having the courage to do what was asked of her, her husband's relations seized her and hung her to the nearest tree.

1: Conzemius M-4, 5 (1921) 1932
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628 These acts of vengeance were not considered as murders but as duly merited punishments, wherewith a crime, supposed or real, had been expiated. Thus one murder was often the first link of a long chain of similar crimes, as the relations of the first victim considered themselves compelled, according to the Indian custom, to put the murderer to death.

762 Suicide was generally committed by hanging or by discharging a loaded gun in the throat. No one would prevent a person from taking his own life under the above-mentioned circumstances.

674 There is in general little crime among the Indians and the life and property of foreigners is respected; several cases of piracy, that is, the plundering by the Miskito of vessels wrecked on the coast, have been recorded, however (Bard: 160; Bell, b: 294; Wickham, b: 204).

CHARACTER

157 The Indian, as a rule, is very frank and outspoken, silent, phlegmatic, honest, and reliable, but also somewhat revengeful and ungrateful and inclined to drunkenness.

Even among their own kindred the Indian will show great reserve upon the first approach, but after a while this changes, and soon they will relate to each other the details of their respective hunts and travels.

Stinginess is considered the worst of all vices, and the foreigner who is very liberal in bestowing small presents among them is soon known far and wide as a "good man" (M.: *wdikna pdin;* S.: *al yamni, al yamka*).

461 All these Indians are somewhat inclined to laziness and are fond of passing whole days in their hammocks. Still one must admire their great patience, skill, and endurance in hunting and fishing. They are able to paddle in the hot sunshine for 10 hours a day, making only a short stop at noon in order to prepare their meal.

157 Much patience must be observed during the relations with the Indians, and self-control is considered by them as one of the cardinal virtues. If a laborer has been insulted by his employer he will generally keep up with his day's work, or the time he has been contracted for, without showing any perceptible sign of dissatisfaction. At the expiration of his engagement he will ask for his time, without giving any reason, and later apply somewhere else for work. The Indian has little respect for the newcomer who indulges frequently in sudden outbursts of temper.

578 As a general rule these Indians are not quarrelsome, especially the men. But once a difference has arisen between the women, the most obscene and vulgar language is used without interruption for whole

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

of quarrel between two women. The fact remains that very little 674
wrong-doing exists among the Miskito since once a wrongdoer is found 626
out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. 682
This is accomplished by the use of poisonous extracts from plants, alli- [278]
gator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he [762]
commits suicide, wherepon the offender must do the same. In most [674]
instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and 151
generally reliable. Stinginess is considered the worst vice and foreign- 171
ers who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and 551
relation, such as mother, father, daughter, brother, etc. Each has a 601
name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a [784]
direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and oc- 576
casionally *nahki sma (how are you?) The other replies aiāma sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of water- 361
ways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

1: Conzemius M-4, 5 (1921) 1932
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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalnin;* U.: *sumalnaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 763 [888]

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2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

1: Conzemius M-4, 5 (1921) 1932
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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic ear-rings (M.: *kyama-lula*, *kyama-dusa*, *kul-dusa*, *bapriñ*; S.: *tapana*) and finger rings (M.: *mat-diñka*, *mihta-diñka*; S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths. 301 304

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives. 302 [764]

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they anoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females. 302 824

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus*; P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing. 412 302

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

1: Conzemius M-4, 5 (1921) 1932
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231 439 According to Belt (204) the Sumu living on the upper Rio Grande used to come periodically to the Spanish settlements in order to obtain dogs. They would barter a gun or a large iron pot for a single dog, if it was of the right color. Some Ladinos around Olama had even in those days commenced to rear dogs to supply the demand. These Indians had a special liking for black ones, and did not value those of any other color so much. Lehmann (c: I, 405) states that [764] the Miskito formerly buried a red dog (*pelun*) with a dead person, in order to serve the latter on his voyage to the underworld. However, the writer has never observed that either Sumu or Miskito have a preference for a certain color.

231 There is no record of the former existence on the Mosquito Coast of the "xulo" (xolotl) or barkless dog, which was tamed in the Pacific region of Nicaragua at the time of the conquest. The native names of the common dog (M.: *yul;* S.: *sul, sulu, solo*) bear a close affinity to that Nahuatl word. Allen has identified the barkless dog in question with the raccoon, which is, however, called *sukuk* by both Miskito and Sumu.

AGRICULTURE

241 Agriculture is not as highly developed on the Mosquito Coast as in the remainder of Honduras and Nicaragua; it furnishes, nevertheless, the principal means of subsistence.

PREPARING THE PLANTATION.—In order to make their plantation (M.: *inala;* S.: *yamak*) the Indians cut down a patch of the forest, generally on the bank of a navigable stream. The rough work, that is the felling of the trees and the clearing of the ground, is essentially man's work. The large hardwood trees are usually left standing, but all the other giants of the forest are cut down. This work takes place at the beginning of the dry season, about February or March. Toward the beginning of May fire is set to the tangled mass. When the ground has thus been prepared by the men, the women take charge of the future plantation, the planting and cutting down of the grass and weeds being their occupation. Sometimes the man and wife do the planting together. The harvesting is the work of the females.

The ax, machete, and "barreta" or pointed digging stick are the only agricultural implements. The great heat and moisture with the comparatively uniform temperature all the year round enable a constant succession of vegetation, and trees may bear fruit at all seasons. The soil is in general very fertile, but large areas of the country are covered with savannas with sandy and gravelly soil, which is entirely unfit for cultivation and produces only scanty grass, pines, oaks, and various species of scrubby plants. The Indians from this part of the country are therefore compelled to make their planta-

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

The men never shed any tears at the death of their near relations, but they will break out in low lamentations. Upon the death of his wife the Miskito Indian will exclaim as follows: Why did you leave me? Who is going to cook my food now? Who is going to wash my clothes now? Who is going to raise your children? How unfortunate am I! I shall never be happy again! Your children are always asking for you!

This manner of mourning is a common occurrence at the Miskito villages. It is also practiced by the Indians in the Gran Chaco and the Guianas. The Sumu women will also chant eulogiums upon the deceased, but they manifest their sorrow in a much quieter manner.

BURIAL CUSTOMS

Burial by simple inhumation is the present practice. The Miskito dress the deceased in his best clothes and place him in a canoe cut crosswise in two parts, one half of it serving as cover. The Sumu simply wrap the body in bark cloth, as did the Miskito in former days, according to Sloane (b: 279) and Jefferys (46). These authors state that the Miskito sewed the dead in a mat, and did not lay the body in the grave lengthwise, but placed it upright on the feet, with the face directly to the east. Nowadays, however, among both tribes the dead person is laid lengthwise on its back to a depth of 4 or 5 feet.

MISKITO BURIAL CUSTOMS.—The burial ground is generally a short distance from the village. While the corpse is being carried thereto the female relatives renew the mourning and try to injure themselves, but they are watched by the others and are not allowed to harm themselves seriously. Livestock is kept away from the burial ground, as the spirit of the deceased is liable to enter it and cause it to die.

Formerly all the personal property of the deceased, as his tools, ornaments, dogs, etc., were put in the grave, in order to assure him a livelihood in the other world. Division of labor continues in the other life, and archeological investigations from various parts of America have shown that spindle whorls are never found in the same graves as stone celts. The hair of the female relatives is also joined to the corpse. A pine-wood torch is also added in order to guide the latter during his long journey to the hereafter. A small canoe is put in the grave, for the voyage to the underworld has to be effected partly on water, and that country is surrounded by a river which has to be crossed with the aid of a dog. For that reason a dog was also killed at each burial. Nowadays all articles put in the grave are broken so as to prevent the stealing of them, but generally only the useless property of the deceased is buried with him, while the remainder is kept by his family. Formerly even his livestock had to be killed, and the plantations and fruit trees destroyed, so that the living should

1: Conzemius M-4, 5 (1921) 1932
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764 not "rob the dead," thus causing the latter's spirit to linger about doing all sorts of mischief. The property of a deceased is known by the name *platira* (M.) and *lawan, luwani* (S.).

According to Exquemelin (French ed.: II, 275) the Miskito also formerly killed the slaves and servants at the death of a chief, in order to serve their master in the other world, a custom found in ancient America among the civilized tribes from Mexico to Peru. Even his priest (*sukya?*) was put to death to be at his service in the hereafter. This author goes on to say that at such an occasion the Miskito had the intention of sacrificing a Portuguese slave who had lost an eye by an arrow shot. But the latter persuaded the Indians that only men without any physical defect would be allowed in the future world and that, besides, they were not paying due respect to the deceased by giving him as servant a one-eyed man when there were so many with two eyes who could be used for this purpose. To this the Miskito agreed and the Portuguese's life was spared.

A small hut is erected over the grave, whereto the women repair every day in order to light a fire and prepare food and drink for the deceased. These viands are renewed every day, and are supposed to be consumed by the spirit or soul (*iaiāni*) of the dead person. In former days the quality of such food was apparently far superior to that found nowadays on the graves, for Exquemelin (Engl. ed.: 254) makes the following statement: "I have oftentimes with my own hands taken away these offerings and eaten them instead of other victuals. To this I was moved, because I knew that the fruits used on these occasions were the choicest and ripest of all others, as also the liquors of the best sort they made use of for their greatest regale and pleasure."

765 Secondary burials appear to have been practiced formerly by the Miskito. According to Exquemelin (Engl. ed.: 254; French ed.: II, 274) the widow opened the grave [a] of her husband about one year after burial. Owing to the great humidity the body would soon decompose. She scraped and washed the bones and dried them in the sun. Then she placed them in a *cubala*,[b] a certain pouch or satchel, which she had to carry on her back during the daytime, and upon which she slept at night. She had to keep this up for a whole year, after which she hung the bag with the bones to the post of her house for another year. After that period she was allowed to remarry. If she had no house of her own she hung the bones at the door of that of her next neighbor or relation. The above act was not performed if the deceased was a single man, but food was carried to his grave. The practice of scraping the bones was also performed by the Indian

[a] This author does not state where the corpse was buried in those days, but we learn from M. W. (309) that the Miskito buried their dead in their huts.

[b] *Kuala* is the Miskito name for cloth.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

woman if her husband was a buccaneer, but men were not bound to carry it out at the death of their wife. Exquemelin does not state what was done ultimately with the bones. The custom points toward the practice of endo cannibalism, which was widespread in South America, and which consisted of grinding up the bones of the deceased and consuming them in a drink. Exhumation has not been mentioned from the Mosquito Coast by subsequent travelers. 765

SUMU BURIAL CUSTOMS.—Our knowledge regarding the former burial customs of the Sumu is more rudimentary. Cremation and secondary urn burial appear to have been made use of occasionally; in the former case the ashes were placed in an earthen vessel, as did the more advanced tribes of the Pacific slope of Honduras and Nicaragua. The common people, however, were probably merely inhumed. 764

On account of the dense jungle the old burial grounds are difficult to discover. Sometimes they are indicated by low mounds which yield fragments of pottery and metates, or spindle whorls, greenstone beads, etc. A large one of these burial sites is found at the bank of Rio Punta Gorda, near its junction with Rio Pejivalle; smaller ones can be found in many other parts of the coast. In certain regions of the Atlantic slope of Honduras, apparently occupied formerly by the Paya, as at Bonito Oriental, Piedra Blanca, and Siriboya, there are high mounds surrounded by walls.

In Chontales (Nicaragua), which department was formerly occupied by the Ulwa, secondary burial was practiced; the remains were deposited upon the summit of a hill or in an artificial mound in the savanna. The spot was often marked with a cairn of loose rocks constructed in the shape of a parallelogram, varying greatly in size. The sides of these structures were either sloped or perpendicular, and the edge of the upper surface was furnished with a parapet. Fragments of rude statues placed on them have been found, and it would appear as if there were one or several large ones in the center and a small one at each corner. Boyle (a: 43–44) describes a very large cairn, measuring about 58 by 40 yards and close to 10 feet in height, which stood in the neighborhood of La Libertad on the summit of a mound 60 to 70 feet high. 765

Rogers (107) gives a short description of masks for the faces of the dead chiefs brought about 1775 from the interior of the Mosquito Coast, undoubtedly from the Sumu country. They were made of clay mixed sometimes with gold dust and were said to be the likeness of chiefs or other prominent persons who had been buried at such places. In many parts of America such face masks were used on mummies; we do not know, however, if the art of mummification was known on the Mosquito Coast. This practice had been observed by Columbus at Cariay (Atlantic coast of Costa Rica) in 1502 and was probably limited to men of rank. Rogers has de- 764 532

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

764 pictod eight of the above-named masks; most of them have their backs concaved in a cylindrical form, by which we might imagine that they were parts of sepulchral urns. (See also Roberts, pp. 299–300.)

775 CATCHING THE SOUL OF A DECEASED PERSON.—Upon the death of a person the soul (M.: *isiāni*) or "shadow," as the Creoles say, leaves the body and remains about the house. After the burial it is "caught" by the sukya and taken to the grave; otherwise it will roam about and do all sorts of mischief. This custom has been introduced among the Miskito by the West Indian Negroes; recently it has spread to the Twahka and Panamaka.

This action takes place at night by a very dim light. The task of the sukya appears to be by no means easy. Sometimes he fails to catch the soul on the first night and has to do everything over again on the following day. He throws himself into a state of ecstasy and then dances around the bed of the deceased, over which a white cotton sheet has been spread. Then he sits down in a hammock which has been slung near by and he communicates the messages received from the dead during his supernatural state. The latter might give him the names of the persons who owe him some money or have failed to return a borrowed object. If he owns some young trees, the fruits of which he has not yet tasted, he will order them cut down without any further delay. Toward daybreak, when all the people present are more or less drunk, for intoxicating beverages are served to all the guests, the sukya seizes some insect, generally a firefly or a beetle, which he pretends to be the soul of the deceased. He wraps it up quickly in the bed sheet or incloses it in a bottle and then takes it to the grave.

Some of these sorcerers are said to be able to catch the soul of Indians who have died far away from home. This is, however, a more difficult task, as the soul may keep him waiting for a whole week, until it condescends to be taken to its final resting place. Formerly the soul was supposed to enter animals or other objects belonging to the deceased, and these had to be killed or broken to drive the intruder out.

THE HEREAFTER

Both tribes believe in the immortality of the soul and its translation to a realm of happiness and bliss. Remains of this belief are seen in the burial customs, for certain objects are given to the dead which are indispensable to him during his long journey to that final resting place. Some Indians make the future existence dependent on present conduct, but this idea has undoubtedly been borrowed from Christianity. [177]

2: Kirchhoff E-4 (no date) 1948
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764 The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to
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769 the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.
[768] According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

1: Conzemius M-4, 5 (1921) 1932
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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation.

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalnia;* U.: *sumalnaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches.

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary.

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about.

The female relations of the deceased cut their hair off; according to Bell (a: 255; b: 90) this is done under the idea that no one should handle it after the dead person. In former days the Ulwa Indians used to cut their hair off also at the death of their wife (Wickham, b: 208), but nowadays the men of both tribes always keep their hair cut short.

The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialize by pronouncing its name.

1: Conzemius M-4, 5 (1921) 1932
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765 In the evening succeeding the death of a person a sort of "wake" is celebrated, to which the entire village is invited. Plenty of food and intoxicants are served to the guests, and a cow is butchered for its meat in case cattle are raised in the neighborhood.

MOURNING.—When a death occurs in a Miskito village all the neighbors assemble, and the women begin to lament one after the other. First comes the turn of the near relatives, as the wife of the deceased person. She throws a large cloth over her head and sits at the side of the dead body, leaning over him to smell the scent, which is the equivalent to our custom of kissing. Then she begins a sort of crying song or dirge in which she eulogizes the departed, enumerating his good qualities, real or supposed. This song has but one tune and time, but the words are improvised. She asks him why he has left her, if she did not treat him well, if she did not love him enough, and what wrong she could possibly have done him. She keeps on as follows: Who will take care of myself and of your children now? You were such a good husband! You were such an excellent hunter! You never missed the mark and kept us always well supplied with meat! You were so skillful in making plantations; in handling the canoe, the gun, bow and arrow, ax, etc.! We are all so sad now and will never be happy again! Your children are always asking for you! She then menaces the one responsible for this calamity, for death is attributed to sorcery. As she keeps on in this manner, her feelings are worked up, and the final phrases are continually interrupted by sobs. After having lamented in this manner for about half an hour, she dries her tears and resumes her usual occupation as if nothing had happened. One of the other women will then cry over the dead body. This manner of mourning is repeated by the female relations for two weeks after the death of a person, twice a day, a little before daybreak and again at sunset. After this period it may be done by the mourning woman whenever she is sad and reminded of the dead.

Bell has recorded the following song of a Miskito girl from Rio Wawa, mourning for her dead mother; he gives it in English (b:91) and in Miskito (b: 312):

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Alas, mother, poor mother! Alas, mother, where have you gone?
Here are your children crying for you;
Yesterday we were talking together, but now you are lying there.
Alas, mother, did you go from us in anger?
Did we not love you?
Your husband sits outside with his head hung down.
Here the women are sitting with their heads covered,
All for love of you.
But you have abandoned us.
Alas, that I shall never see your face again;
That I shall never hear your voice again.

1: Conzemius M-4, 5 (1921) 1932
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The men never shed any tears at the death of their near relations, but they will break out in low lamentations. Upon the death of his wife the Miskito Indian will exclaim as follows: Why did you leave me? Who is going to cook my food now? Who is going to wash my clothes now? Who is going to raise your children? How unfortunate am I! I shall never be happy again! Your children are always asking for you!

This manner of mourning is a common occurrence at the Miskito villages. It is also practiced by the Indians in the Gran Chaco and the Guianas. The Sumu women will also chant eulogiums upon the deceased, but they manifest their sorrow in a much quieter manner.

BURIAL CUSTOMS

Burial by simple inhumation is the present practice. The Miskito dress the deceased in his best clothes and place him in a canoe cut crosswise in two parts, one half of it serving as cover. The Sumu simply wrap the body in bark cloth, as did the Miskito in former days, according to Sloane (b: 279) and Jefferys (46). These authors state that the Miskito sewed the dead in a mat, and did not lay the body in the grave lengthwise, but placed it upright on the feet, with the face directly to the east. Nowadays, however, among both tribes the dead person is laid lengthwise on its back to a depth of 4 or 5 feet.

MISKITO BURIAL CUSTOMS.—The burial ground is generally a short distance from the village. While the corpse is being carried thereto the female relatives renew the mourning and try to injure themselves, but they are watched by the others and are not allowed to harm themselves seriously. Livestock is kept away from the burial ground, as the spirit of the deceased is liable to enter it and cause it to die.

Formerly all the personal property of the deceased, as his tools, ornaments, dogs, etc., were put in the grave, in order to assure him a livelihood in the other world. Division of labor continues in the other life, and archeological investigations from various parts of America have shown that spindle whorls are never found in the same graves as stone celts. The hair of the female relatives is also joined to the corpse. A pine-wood torch is also added in order to guide the latter during his long journey to the hereafter. A small canoe is put in the grave, for the voyage to the underworld has to be effected partly on water, and that country is surrounded by a river which has to be crossed with the aid of a dog. For that reason a dog was also killed at each burial. Nowadays all articles put in the grave are broken so as to prevent the stealing of them, but generally only the useless property of the deceased is buried with him, while the remainder is kept by his family. Formerly even his livestock had to be killed, and the plantations and fruit trees destroyed, so that the living should

1: Conzemius M-4, 5 (1921) 1932
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764 not "rob the dead," thus causing the latter's spirit to linger about doing all sorts of mischief. The property of a deceased is known by the name *platira* (M.) and *bawan, bawani* (S.).

According to Exquemelin (French ed.: II, 275) the Miskito also formerly killed the slaves and servants at the death of a chief, in order to serve their master in the other world, a custom found in ancient America among the civilized tribes from Mexico to Peru. Even his priest (*sukyas*?) was put to death to be at his service in the hereafter. This author goes on to say that at such an occasion the Miskito had the intention of sacrificing a Portuguese slave who had lost an eye by an arrow shot. But the latter persuaded the Indians that only men without any physical defect would be allowed in the future world and that, besides, they were not paying due respect to the deceased by giving him as servant a one-eyed man when there were so many with two eyes who could be used for this purpose. To this the Miskito agreed and the Portuguese's life was spared.

A small hut is erected over the grave, whereto the women repair every day in order to light a fire and prepare food and drink for the deceased. These viands are renewed every day, and are supposed to be consumed by the spirit or soul (*iriāni*) of the dead person. In former days the quality of such food was apparently far superior to that found nowadays on the graves, for Exquemelin (Engl. ed.: 254) makes the following statement: "I have oftentimes with my own hands taken away these offerings and eaten them instead of other victuals. To this I was moved, because I knew that the fruits used on these occasions were the choicest and ripest of all others, as also the liquors of the best sort they made use of for their greatest regale and pleasure."

765 Secondary burials appear to have been practiced formerly by the Miskito. According to Exquemelin (Engl. ed.: 254; French ed.: II, 274) the widow opened the grave [a] of her husband about one year after burial. Owing to the great humidity the body would soon decompose. She scraped and washed the bones and dried them in the sun. Then she placed them in a *cabala*,[b] a certain pouch or satchel, which she had to carry on her back during the daytime, and upon which she slept at night. She had to keep this up for a whole year, after which she hung the bag with the bones to the post of her house for another year. After that period she was allowed to remarry. If she had no house of her own she hung the bones at the door of that of her next neighbor or relation. The above act was not performed if the deceased was a single man, but food was carried to his grave. The practice of scraping the bones was also performed by the Indian

[a] This author does not state where the corpse was buried in those days, but we learn from M. W. (309) that the Miskito buried their dead in their huts.

[b] *Kwala* is the Miskito name for cloth.

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woman if her husband was a buccaneer, but men were not bound to carry it out at the death of their wife. Exquemelin does not state what was done ultimately with the bones. The custom points toward the practice of endo cannibalism, which was widespread in South America, and which consisted of grinding up the bones of the deceased and consuming them in a drink. Exhumation has not been mentioned from the Mosquito Coast by subsequent travelers.

SUMU BURIAL CUSTOMS.—Our knowledge regarding the former burial customs of the Sumu is more rudimentary. Cremation and secondary urn burial appear to have been made use of occasionally; in the former case the ashes were placed in an earthen vessel, as did the more advanced tribes of the Pacific slope of Honduras and Nicaragua. The common people, however, were probably merely inhumed.

On account of the dense jungle the old burial grounds are difficult to discover. Sometimes they are indicated by low mounds which yield fragments of pottery and metates, or spindle whorls, greenstone beads, etc. A large one of these burial sites is found at the bank of Rio Punta Gorda, near its junction with Rio Pejivalle; smaller ones can be found in many other parts of the coast. In certain regions of the Atlantic slope of Honduras, apparently occupied formerly by the Paya, as at Bonito Oriental, Piedra Blanca, and Siriboya, there are high mounds surrounded by walls.

In Chontales (Nicaragua), which department was formerly occupied by the Ulwa, secondary burial was practiced; the remains were deposited upon the summit of a hill or in an artificial mound in the savanna. The spot was often marked with a cairn of loose rocks constructed in the shape of a parallelogram, varying greatly in size. The sides of these structures were either sloped or perpendicular, and the edge of the upper surface was furnished with a parapet. Fragments of rude statues placed on them have been found, and it would appear as if there were one or several large ones in the center and a small one at each corner. Boyle (a: 43–44) describes a very large cairn, measuring about 58 by 40 yards and close to 10 feet in height, which stood in the neighborhood of La Libertad on the summit of a mound 60 to 70 feet high.

Rogers (107) gives a short description of masks for the faces of the dead chiefs brought about 1775 from the interior of the Mosquito Coast, undoubtedly from the Sumu country. They were made of clay mixed sometimes with gold dust and were said to be the likeness of chiefs or other prominent persons who had been buried at such places. In many parts of America such face masks were used on mummies; we do not know, however, if the art of mummification was known on the Mosquito Coast. This practice had been observed by Columbus at Cariay (Atlantic coast of Costa Rica) in 1502 and was probably limited to men of rank. Rogers has de-

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This obstacle overcome, the soul finally makes its entry into *Obul*, the land of plenty.*

THE FESTIVAL OF THE DEAD

The festival of the dead (M.: *sikro, sihkro;* S.: *sdö*) is the most important of the bacchanalian orgies of these two tribes. Its real significance appears to be unknown to the large majority of the present-day Indians; it is certain, however, that it has some connection with the journey of the souls of the deceased to the hereafter.

THE SIKRO OF THE MISKITO.—To most Miskito the *sikro* of to-day is only an occasion for merrymaking and getting drunk. Originally only one *sikro* was made for each deceased person, but nowadays the Indians repeat this feast several times in order to have an excuse for a drinking bout. The custom can still be observed among the "heathen" Miskito of the upper Rio Coco and of Honduras. In the remaining districts of the Mosquito Coast nearly all the Indians belonging to this tribe have been converted to Christianity.

The *sikro* takes place about a year after a death, or rather as soon as the field of sweet cassava, planted especially for this purpose, has come into maturity. Although the Miskito make a great variety of intoxicating drinks (*miala*), the one consumed on such an occasion is invariably prepared from cassava. The fermented root of this plant is generally kept in casks obtained from the foreign merchants, but in former days the drink was left to ferment in large homemade earthenware vessels (*sumi*). The expenses of the feast are borne by the relatives of the deceased, who will butcher one or two head of cattle for this purpose, but all the neighbors lend a hand at the preparation of food and drink, and they even help at the planting and reaping of the cassava.

All the men and many of the women from the neighboring settlements are expected to come, and they begin to arrive, dressed in their best attire, about sundown on the specified day. The festival lasts until all the food and drink has been consumed, that is, two or three days. The women keep apart by themselves, and do not mingle with the men, except in order to pass the calabashes of drink around from one of the guests to the other. Occasionally both sexes

* The Sumu never kill any of the various creatures which they will have to meet on their final journey. When they deprive a toad of its skin for the making of a drumhead, they do not kill this amphibian, but release it again afterwards, and give it a few berries from a certain tree as a payment for its skin. The parents also admonish their children not to ill-treat animals, especially such as may be useful to them on the voyage to the hereafter. Similar conceptions are met with among primitive Indian tribes in various parts of the Americas who have had little or no intercourse with Christians.

1: Conzemius M-4, 5 (1921) 1932
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765 perform very "tame" dances which they have apparently learned
535 from the foreigners.[1] One dance, which does not lack a certain grace, is performed by the young women, forming a half circle. They place the left arm around the neck of their neighbor and perform slow movements of the body to the rhythm of calabash rattles which they hold in the right hand. Occasionally they utter a soft melancholy song.

765 Several young men are continually playing reed flutes or flageolets
533 (*bra*), while others beat a skin membrane drum (*kwábi*) with the palm of the hand. Most of the "music" performed consists of conventional imitations of the voice of animals or birds; the dancers accompany it by imitating the gait or the actions of the particular animal or bird.

765 Toward midnight two or three old men play on very long, stout bamboo flutes, which produce such an unearthly noise as to really scare a stranger. These instruments are said to be blown in order to direct to the feast two or three masqueraded figures which are supposed to come from the forest. As soon as the latter approach the hut all the women run inside, for they are not supposed to see them. The relatives of the deceased person immediately cover their faces with a cloth and then begin to lament and cry, for the masqueraded persons have some connection with the departed one. They try to injure themselves by knocking the head against the house posts, or by inflicting wounds on themselves with the aid of arms, rocks, or other objects, but the guests intercede and prevent them from harming themselves in a serious way. At a *sikro* on Rio Plátano I was witness when an old woman made a deep cut in her arm with the aid of an old, rusty machete. The maskers walk a few times around the hut, but after having been engaged in conversation by the *sukya* they return to the bush whence they had come. In order to induce them to depart some of the men make a strange noise on a flute (*yul*) made from the *klissá* reed and having some beeswax applied to the mouthpiece. As soon as they have left the women dry their tears, and they are again as happy as before, for they know now that their deceased relative will within a short time arrive safely at the land of hereafter.

The head and shoulder piece of the masquerade dress is made of a piece of tanned skin or of the inner bark of certain trees; it is painted red and black. Holes are made in the part covering the face to correspond to the wearer's eyes. Dry grass is used to simulate hair, while a crinolinelike fringe of palm leaves depends from the shoulder piece, so that nothing but the legs of the wearer are visible. The headpiece is surmounted by an upright bar of light wood with the likeness (*lilka*) of a certain animal or object. All

[1] [At the festival of the dead – Analyst]

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these masks are known by the general name of *yapti*, "mother," yet one is male and the other female, while the third one (if there be one) is said to be the young. These figures are supposed to represent the spirit of some animal, it appears, and they had originally perhaps some totemistic significance. Of the various figures which may appear at a *sikre* I have recorded the following: *Tusfina* (sawfish) *yapti*, *ilili* (shark) *yapti*, *kriksa* (sea gull) *yapti*, *tilka* (tapir) *yapti*, *kyaki* (agouti) *yapti*, *para* (above, over?) *yapti*, *sikra* (banana) *yapti*, and *balbul* (cassava roasted in the ashes?) *yapti*.

The writer was present at a *sikre* celebrated in 1921 at a Miskito village situated at the mouth of Rio Plátano (Honduras), at which the symbol of the *tusfina-yapti* appeared. The two large figures were said to be the father (*dias*) and the mother (*yapti*), while the smaller one was the child (*lukpya*). Each one of these three figures was surmounted by a bar of balsa wood painted in red and black, and provided with teeth on each side so as to simulate the bill of a sawfish (*tusfina*). On the larger figures this bar was about 4 to 5 feet long, 5 to 6 inches wide, and 3 to 4 inches thick, while the small one measured only 3 feet in length and 4 inches in width.

At another *sikre*, celebrated in the presence of the writer in 1921 at Tausin, on an island in Caratasca Lagoon, there appeared only two figures, male and female, of practically the same size, and called *para-yapti*. The bars of balsa wood surmounting the masquerade dress measured about 3 feet; their upper part was carved in the semblance of a human head, on which an old palm leaf hat was placed. Sticks inserted at right angles represented the arms. Both figures were dressed and painted partially in red and black, and had wooden pipes in their mouths. The following morning the boys from the village were running about and playing with these masquerade dresses.

After midnight, when the huge quantity of mishla has produced its effect, the men become very noisy and quarrelsome, and their actions are more or less irresponsible. It is disgusting to see them vomit on the floor and then go and drink again. Old grudges and rivalries are revived, old grievances raked up, and fist fights occur on the slightest provocation. Fortunately the women collect and hide all the weapons at the beginning of the orgy, which fact is already mentioned by Dampier (I, 10), and the fighters can not do each other great harm. Besides, the women try as hard as they can to reconcile the quarrelers, but owing to the state of excitement in which the men are, their mediation is often rewarded by blows. Finally the drinkers tumble down and remain on the ground as they fall. These festivals, however, never degenerate into the wild

1: Conzemius M-4, 5 (1921) 1932
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and indecent scenes which occasionally take place at the "wakes" of the Negroes who have settled on the Mosquito Coast.

THE SAU OF THE SUMU.—The various Sumu tribes call the festival of the dead by the name *sau*, which word also means "earth," "ground," "country," "world"; the Bawihka, however, call it *sikro*, as do the Miskito, and like the latter used to carry animal masks on that occasion.

The following details apply to the *sau* of the Twahka and Panamaka, the writer having been unable to obtain reliable information pertaining to that of the Ulwa. The intoxicating drink for this occasion is prepared from maize and is known by the name *puput* (lit.: "gray"). All the guests are smeared with black paint in such a manner that they are not recognizable. Members from other tribes are not admitted, but all the young Sumu from far away are expected to come. The females, being always connected with ceremonial impurity, are excluded from the festival itself, but they remain in a neighboring hut to prepare food and drink.

Before the beginning of the festivities the sukya goes to the dead person's grave and deposits there a calabash of *puput*. The drink is said to be consumed by the buried person and enter the latter's body by way of the navel. To this calabash the sukya attaches the extremity of a ball of cotton thread, which has been spun by the female relations of the deceased. Then he repairs to the hut where the *sau* is to take place, unwinding the thread as he goes along, and carrying it over the lower tree branches, for it must not touch the ground. If a river has to be crossed, a little canoe with a paddle is tied there to the bank. The distance from the grave to the house may at times reach over several miles. This custom is also found among the Talamanca Indians of Costa Rica and in other areas of both hemispheres.

During the night the sukya, who is the principal actor at the *sau*, practices incantations, and the spirit of the deceased appears, having found its way by the above-mentioned cotton thread. It is not visible to anyone but the sukya, who converses with it in a mysterious language and gives it the final instructions to be observed for the safe entry into the land of hereafter. Then the supernatural visitor departs. The feast lasts from two to three days, that is, when the thread is found to be broken, a sure sign that the soul has safely arrived at the presence of *Itwana* (*Itoki*).

The *sau* of the Sumu is in general less noisy than the *sikro* of the Miskito. The guests eat and drink continually, but they neither sing nor dance. Melancholy music is furnished by reed flutes (*bara*), cedar drums (*pantau*, *panatau*), and short fifes (*una*).

2: Kirchhoff E-4 (no date) 1948
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Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam ba[illegible]

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

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[787] Shamans invoke the soul in order to discover who was responsible for
769 the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

787 According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

1: Conzemius M-4, 5 (1921) 1932
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the rainbow, which the Panamaka Sumu sometimes call *wulasa ewiwa*, "the devil is vexed." At its appearance the Indians hide their children in the huts so that they may not see it nor point at it; by the latter act the outstretched arm or hand is supposed to become crippled and covered with terrible sores.

Thunder (M.: *alwani;* S.: *alwana*) is sometimes confounded with God among the heathen Miskito and Sumu. According to some, he created the world and governs it by appointing the seasons; others say that he lived formerly on earth and was the first man. When he thunders, it is to warn man that a flood is coming. From an Ulwa Indian, originally from the headwaters of Rio Grande, I obtained the following story, which I propose naming—

The Origin of the Kiawa Rocks

God (*Ma-Papaski*) sent Thunder (*Alwana*) as his representative to the earth to instruct the people in agriculture and in other arts and crafts. One day while Alwana was absent from home an evil spirit, named Kiawa, came and carried off his wife.

A parrot (*warikwa*) informed Thunder of this fact while the latter was planting pine trees on a big rock at a place called to this day *Alwana kumo-ka rumpaki* (in Miskito, *Alwani ki-ni-ka lalkira*). This locality is on Rio Quirguasca, the upper course of Rio Grande; pine-covered rocks and low hills extend there to the very edge of the river.

Upon hearing what had happened, Thunder left his work in order to wrest his wife from Kiawa. He found the latter at his home on Rio Iya, a tributary of Rio Tuma. Kiawa was drunk at the time, but he was a powerful giant, and Thunder was unable to master him at first.

When the fight began Kiawa turned into a boa constrictor (*wyasi*) and swallowed his own wife, in order to prevent her from falling into the hands of Thunder. The two enemies then vied with each other in growing tall, in order to reach the clouds. Each in turn outgrew the other, until finally Thunder's head overtopped the clouds, which enabled him to press his enemy to the ground. With his long machete (*wasni*) he then cut Kiawa in pieces, thereby restoring to life all the people who had been swallowed by the giant. The various parts of the latter turned into rocks which are visible on the upper Rio Iya, and are still known by the name Kiawa. The Indians claim that sometimes these rocks bleed, and that certain parts of the giant, as his head and navel, may still be distinctly seen.[2]

Sirkira.—More powerful than God or the various tribal heroes are the numerous evil spirits (M.: *ulasa, lasa;*[1] T., P.: *wulasa;* U.:

[1] Heath (p. 419) gives a slightly different version of this story.
[2] Dampier (I, 8) already states that the devil is called Wallawa by the Miskito.

1: Conzemius M-4, 5 (1921) 1932
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According to a tradition recorded by Grossmann (b: 4) the world was created by two brothers, of whom the elder was named *Papañ*.[74] After the hills, lagoons, forests, rivers, and savannas had been brought into existence the two brothers were paddling about the river in a small canoe. In shooting a rapid the canoe capsized and the two creators were thrown into the water and compelled to make for the shore. Feeling cold, they built a fire; and feeling also the pangs of hunger they went into the forest, where they found some maize, which they plucked and roasted. As they made their meal they threw some of the cobs on the ground, where they instantly were transformed into animals; others thrown into the water became fishes, while the remainder stayed in the air as birds. Dumfounded at this sudden manifestation of life around them and the strange shapes which it assumed, they forgot their situation, until *Papañ* was brought to a realization of it by coming in contact with the fire, by which he was caught. As he started to burn, he ascended from the earth, rising higher and higher, until his brother could only see him as a large, round, burning spot high up in the sky. He thus became the sun (*ma*). While the younger brother was gazing upward and awaiting the return of *Papañ*, he was also lighted up by the treacherous fire and started to rise, but, being unwilling to share the fate of his brother, struggled to maintain his gravity, and thus raised a vast quantity of sparks; but after all he had to give in and go up, accompanied by the sparks, which spread themselves over the firmament, he remaining in the midst of them. Thus were formed the moon (*wátko*) and the stars (*yala*). The Sumu consider themselves the children of *Papañ*, having been formed from his rays.

DELUGE.—The Miskito and Sumu, like many Indian tribes of America, have traditions of a great catastrophe in which a whole country was submerged, only a few people being able to escape to the mountain tops. The following legend, referring to such a deluge, was told to the writer in 1921 by a Panamaka Sumu from the village of Tasbapauni (Rio Prinsapolca):

Two brothers Suko (="bamboo") and Kuru (="cacao pataste," *Theobroma bicolor*) went out fishing to the Cualigua (Kwaliwa) Creek, a tributary of Rio Ocongues (Prinsapolca system). They caught many excellent food fishes of a species known by the Indian names *srik* or *sirik*. Then they had a gigantic river catfish (M.: *batsi*; S. *susum*) at the hook. Suko immediately wanted to eat a piece of the latter, but Kuru objected, as it appeared to him to be a sort of spirit. Suko, however, did not listen to his brother, and he roasted a piece of the fish and ate it. But hardly had he finished his meal when he became very thirsty. Having eaten too much, he

[74] *Papañ* is the Sumu name for "father."

1: Conzemius M-4, 5 (1921) 1932
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could scarcely move, and he asked his brother for some water. The latter did as he was told, but the more Suko drank the thirstier he became, and he kept his brother continually on the run to fetch water. Finally Kuru became tired of this and helped his brother to get to the edge of the creek, so that he might drink as much as he wanted. 773

Arrived at the waterside, Suko lay down on the ground, and reaching with his head down in the water, he kept on drinking without stopping. Gradually his body assumed the shape of a gigantic boa constrictor (M.: wauls; S. wayil), while the head retained its normal size and shape. Kuru became scared and he went home, but did not dare tell anything about what had happened. When the people inquired about his brother, he answered that he was still engaged in fishing and would come a little later.

But the neighbors noticed that something had happened and they made off all together to look for Suko. Arrived at the fishing ground, they found the boa constrictor on the branches of a very high ceiba or silk-cotton tree. But hardly had they perceived him when a big flood came which inundated the whole country. Every one was drowned with the exception of Suko and the latter's wife and children.

CHRISTIANIZATION.—Many women and children who have not been christened carry small crosses, medallions, and scapularies around their neck, which articles they have obtained from passing priests, or bought from Ladino traders. They consider them generally as charms to ward off danger, sickness, poison, and death. By many Indians who have not received any teachings from missionaries baptism is considered often only a sort of magic ceremony to get a new name, drive out the devil, or ward off danger, evil, and the like. Even in the interior, where many Indians pretend to be Catholics, the cult of the saints is often nothing less than a fetish worship. Pictures and statues of the saints take the place of house idols. When the Indians are on the point of committing an act which does not agree with the teachings of the church, the respective images or statuettes are covered up with a cloth, so that the saints are unable to observe them. When they ask the saint for a special favor they make a vow or solemn promise to him and pray during nine consecutive evenings. In case the saint proves unreliable he is sometimes punished by being beaten or beheaded or mutilated in some other way. 777

During the colonial period Spanish missionaries made several attempts to penetrate among the aborigines of the Mosquito Coast, but their efforts were unsuccessful. An account of the activities of these Franciscan monks is given by Conzemius (b: 25–31). Since the last years of the nineteenth century Spanish Capuchins from Barcelona have been established at Bluefields and in several of the 797

1: Conzemius M-4, 5 (1921) 1932
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The land of hereafter of the Miskito is far superior to the vale of tears in which we live; it is well stocked with all their favorite game, fish, and other food, as well as drink. Green turtles are plentiful and may easily be caught, and in the forests are large droves of peccaries and monkeys which may be killed at will. Fruit trees are continually in bearing and, like the other food plants there, do not need to be replanted. There are no other people there but Miskito; the paradise is unattainable to Sumu, Rama, Paya, and other tribes, or to foreigners.

JOURNEY TO THE HEREAFTER (MISKITO).—The following story, dealing with the soul's journey to the underworld or paradise, is well known to the Miskito inhabiting the Nicaraguan coast, but not those living on Río Coco and in Honduras.

A Miskito, named *Nakili* or *Nakiki*, had lost his wife whom he loved very much. He went to her grave and there suddenly saw himself in the presence of her disembodied soul (*isiñni*). The latter was only about 2 feet high, and informed him of her starting now her journey to the *Yapti-sisri*.[88] He wished to accompany her, but she told him that such a thing was out of the question, since he was still alive. But he insisted and was not to be persuaded to remain behind, and so they started out together. She led the way and turned into a very narrow trail, which he had never seen before.

They arrived at a place where there were many moths (*sampapa*) flying about. She was afraid of them and did not dare to proceed, but he chased them away and they continued their march.

After a while the trail led between two low pine trees (*ñuas*), which were so close together that the wife could barely pass; the husband, being still in his normal size, was unable to squeeze himself through, but merely walked around this obstacle. According to another version the two trees were constantly moving to and fro, annihilating those persons who had behaved badly on earth. Some again claim that the safe passing of this obstacle was merely a matter of dexterity.

They continued their journey and came to a precipice which was spanned by a bridge of the width of a human hair. Below there was a huge pot of boiling water attended by *sikla* birds. The wife being of reduced size and weight was able to walk over this narrow bridge, but *Nakiki* did not find the distance across very great, and so he jumped it.

Then they arrived at a very large river, where there was a canoe paddled by four toads (*sukiki*).[89] This stream swarmed with a small variety of fish, similar to a sardine, and called *blim* (or *bilim*, *bilam*),

[88] Lit.: "Mother-scorpion," a sort of personified hereafter and heretofore.
[89] According to some Indians this canoe was paddled by a dog.

1: Conzemius M-4, 5 (1921) 1932
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which the soul took for sharks (*ilili*). On the opposite side they saw the country of the *Yapti-misri;* every one there appeared to be happy. The souls of those persons who had not led a righteous life were upset with the boat and devoured by the sardines. The wife was taken over in the canoe by the toads, while he managed to swim over.

On the other side they were received by the *Yapti-misri*, a very tall, stout woman with many breasts, to whom the inhabitants came occasionally to suck like babies. She appeared to be rather angry at *Nakili* for having come, and ordered him to go back to the earth again. He implored her to let him remain, as he loved his wife so much and did not wish to be separated from her. She agreed finally to let him stay.

In this country no one had to work; there was plenty of excellent food and drink, and there was no lack of amusements. But after staying there for some time, *Nakili* longed to go back to earth, in order to see his children again. *Yapti-misri* allowed him to go on condition that he would never return to the hereafter until after his death. She placed him in a huge bamboo rod which she deposited on the river. After a while he noticed from the high waves that he was on the sea, and finally a gigantic breaker threw him on the shore, just in front of his own hut.

JOURNEY TO THE HEREAFTER (SUMU).—After death the soul undertakes its pilgrimage to *Obul* or *Ubul* (lit.: "mottled dwelling"), that is, the paradise, which is situated under the earth toward the east, where the sun rises.

On its journey the soul is attacked by macaws (*dā ees*) and moths (*tapam yula*) which attempt to bite it; it defends itself with the aid of two sticks of wood tied together with cotton thread in the shape of a cross, and which are always joined to the deceased person before burial.

Then the soul is met by a gigantic worm, which devours the women who have not always been faithful to their husbands. Men are not molested by this monster, as they make themselves invulnerable by attaching to the body a coat of cockles (*ulamak*).

The road then leads along the abode of a small black lizard living on trees, and called *kasā*, which tries to catch the soul and deliver it to a toad (*muku*); the latter has a large pot with boiling water on the fire, and throws all the bad people therein. But the soul may easily escape from final destruction by offering some beads to the *kasā*, who is very fond of such ornaments, and by giving likewise some small present to the toad.

The next stage is a high, slippery hill, called *Uy Asaś*, which has to be climbed. The relatives of the deceased smear the soles of his feet with beeswax (*balas*) in order to facilitate his ascending the hill.

2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

2: Kirchhoff E-4 (no date) 1948
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same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

A shaman may also prophesy the future or determine the route hunters should take in order to find game. By conjuring, a shaman may cause harm to come to people. A shaman may be retained by a person to eliminate an enemy.

2: Kirchhoff E-4 (no date) 1948
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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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1: Conzemius M-4, 5 (1921) 1932
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The Indian has a natural reluctance to reveal his religious ideas, especially such as he suspects to seem ridiculous to a stranger. It is therefore very difficult to obtain reliable information from them pertaining to this subject. At the death of a person the material body undergoes dissolution and one or more spirits are set free and roam about doing mischief, until they are directed by the sukya to the Hereafter. Animals likewise have spirits, or they may be possessed by evil spirits.

Conspicuous hills are generally haunted by evil spirits, and the latter are said to have carved the petroglyphs found at certain large river falls. Peculiarly shaped rocks are supposed to have been formerly human beings, who have become petrified, generally as a punishment.[74] Not only may sentient beings be changed into rocks, but they may also originally have issued from them. A Sumu legend traces the origin of that tribe to the Kaunapa Hill on the left bank of Rio Patuca, to a place where petrified navels are said to exist.

Trees and plants appear to be animated by spirits (M.: *lilka;* T., P.: *wayani;* U.: *wayaka*), which affect their growth and the ripening of their fruits. In order to increase the yield of a fruit tree, or to render barren trees productive, several objects are placed on their branches after having been blown upon (M.: *yubakan*) by the sukya. Vegetal attraction charms, which are carried for good luck in the various walks of life, would seem to point toward an original belief in plants possessing associated spirits.

Indians will keep at a certain distance from spirits and do not look at them nor point to them, nor even talk of them, as they might materialize, for, "speak of the devil and he is sure to appear." They even refuse to look at certain places haunted by evil spirits, and if they have to pass at close distance they will turn away the face in an opposite direction.

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[73] This word has evidently a close philological connection with *Nagualli*, the name of a magical high priest of the Aztecs; he was celibate and was supposed to assume animal shape at will. From his name is derived the term "nagualism," a species of sorcery still existing among the ignorant Ladinos in certain regions of Central America. *Nawa* or *nawà* is also the Sumu name for "puma" or "jaguar." Cf. also *nawal* "sorcerer" and *nawal-sà* "to predict, to enchant," in the Quiché language of Guatemala.

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The spirits may come to the neighborhood of human habitations in their anthropomorphic form and try to seduce Indians of the opposite sex, and abnormal children will be the result of this intimacy. Monstrosities among the animal and vegetable world are also held to be spirits. Just like snakes, these spirits are said to have a great passion for women at the menstrual periods.

CONNECTION OF SPIRITS WITH THE SILK-COTTON TREE.—The silk-cotton tree (M.: *sisin;* T., P.: *ponya;* U.: *paniki*) is said to be the abode of the spirits of the departed, and no one ventures under it during the night. It must not be cut down, as by such an act the spirits would be robbed of their favorite resting place, and they would not fail to revenge themselves. Should it be absolutely necessary, however, to cut down a silk-cotton tree, the wrath of the spirits may be avoided by burying something at the foot of the tree in the shape of an offering, as food, red peppers, money, etc. When the tree has been felled, the object in question may be recovered. On Rio Lacus, a southern affluent of Rio Coco, a Sumu used for this purpose two small dolls or puppets (M.: *yapti;* S.: *ditalsa*), which he had obtained from the sukya. This procedure, which savors of African origin, is the only case of this sort which I have met among the Sumu, but the habit in question is common enough among the Miskito.

The Indians also claim that a dugout made from the silk-cotton tree will groan continually during the night, and that at the same time it will travel with tremendous speed. A similar plaintive sound is said to be emitted during the dark by mattresses or pillows stuffed with the down adhering to the seeds of the tree. For the above-named reasons the credulous Indians make no use whatever of the haunted tree.

The Creoles and the West Indian Negroes dread this tree even more than do the Indians; according to them the spirit of the deceased, which they call "shadow" or "duppy," leaves the grave on the third day after death in order to roam about the woods, especially around the ceiba or silk-cotton trees. Some believe that these superstitions concerning the tree may have been taken from the Africans; still, the Maya of Yucatan and the Quiché of Guatemala, who have had practically no intercourse with Negroes, hold beliefs regarding the silk-cotton tree similar to those of the Miskito and Sumu.

CREATION OF MAN.—As stated above, the Miskito confound Thunder (*Alaska*) and God (*Wan-Aisa, Dawan*) sometimes with one another, and both of these supernatural beings are looked upon as the creator of man and the world in general. The Sumu, however, consider the Sun-god (*Uhukapni*) as the Almighty God and Creator of everything, and in former days are supposed to have worshiped him.

1: Conzemius M 4, 5 (1921) 1932
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and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya;* T., P.: *sumalsaia;* U.: *sumalsaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 763 [883]

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about. 761 763

The female relations of the deceased cut their hair off; according to Bell (a: 255; b: 90) this is done under the idea that no one should handle it after the dead person. In former days the Ulwa Indians used to cut their hair off also at the death of their wife (Wickham, b: 208), but nowadays the men of both tribes always keep their hair cut short. 765

The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialize by pronouncing its name. [765]

1: Conzemius M-4, 5 (1921) 1932
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764 picted eight of the above-named masks; most of them have their
532 backs concaved in a cylindrical form, by which we might imagine that they were parts of sepulchral urns. (See also Roberts, pp. 299–300.)

275 CATCHING THE SOUL OF A DECEASED PERSON.—Upon the death of a person the soul (M.: *isiñni*) or "shadow," as the Creoles say, leaves the body and remains about the house. After the burial it is "caught" by the sukya and taken to the grave; otherwise it will roam about and do all sorts of mischief. This custom has been introduced among the Miskito by the West Indian Negroes; recently it has spread to the Twahka and Panamaka.

This action takes place at night by a very dim light. The task of the sukya appears to be by no means easy. Sometimes he fails to catch the soul on the first night and has to do everything over again on the following day. He throws himself into a state of ecstasy and then dances around the bed of the deceased, over which a white cotton sheet has been spread. Then he sits down in a hammock which has been slung near by and he communicates the messages received from the dead during his supernatural state. The latter might give him the names of the persons who owe him some money or have failed to return a borrowed object. If he owns some young trees, the fruits of which he has not yet tasted, he will order them cut down without any further delay. Toward daybreak, when all the people present are more or less drunk, for intoxicating beverages are served to all the guests, the sukya seizes some insect, generally a firefly or a beetle, which he pretends to be the soul of the deceased. He wraps it up quickly in the bed sheet or incloses it in a bottle and then takes it to the grave.

Some of these sorcerers are said to be able to catch the soul of Indians who have died far away from home. This is, however, a more difficult task, as the soul may keep him waiting for a whole week, until it condescends to be taken to its final resting place. Formerly the soul was supposed to enter animals or other objects belonging to the deceased, and these had to be killed or broken to drive the intruder out.

THE HEREAFTER

Both tribes believe in the immortality of the soul and its translation to a realm of happiness and bliss. Remains of this belief are seen in the burial customs, for certain objects are given to the dead which are indispensable to him during his long journey to that final resting place. Some Indians make the future existence dependent
[177] on present conduct, but this idea has undoubtedly been borrowed from Christianity.

1: Conzelmius M-4, 5 (1921) 1932
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The land of hereafter of the Miskito is far superior to the vale of tears in which we live; it is well stocked with all their favorite game, fish, and other food, as well as drink. Green turtles are plentiful and may easily be caught, and in the forests are large droves of peccaries and monkeys which may be killed at will. Fruit trees are continually in bearing and, like the other food plants there, do not need to be replanted. There are no other people there but Miskito; the paradise is unattainable to Sumu, Rama, Paya, and other tribes, or to foreigners.

JOURNEY TO THE HEREAFTER (MISKITO).—The following story, dealing with the soul's journey to the underworld or paradise, is well known to the Miskito inhabiting the Nicaraguan coast, but not those living on Rio Coco and in Honduras.

A Miskito, named *Nakûli* or *Nakîli*, had lost his wife whom he loved very much. He went to her grave and there suddenly saw himself in the presence of her disembodied soul (*isiâsi*). The latter was only about 2 feet high, and informed him of her starting now her journey to the *Yapti-misri*.[a] He wished to accompany her, but she told him that such a thing was out of the question, since he was still alive. But he insisted and was not to be persuaded to remain behind, and so they started out together. She led the way and turned into a very narrow trail, which he had never seen before.

They arrived at a place where there were many moths (*sampapa*) flying about. She was afraid of them and did not dare to proceed, but he chased them away and they continued their march.

After a while the trail led between two low pine trees (*dhas*), which were so close together that the wife could barely pass; the husband, being still in his normal size, was unable to squeeze himself through, but merely walked around this obstacle. According to another version the two trees were constantly moving to and fro, annihilating those persons who had behaved badly on earth. Some again claim that the safe passing of this obstacle was merely a matter of dexterity.

They continued their journey and came to a precipice which was spanned by a bridge of the width of a human hair. Below there was a huge pot of boiling water attended by *sikla* birds. The wife being of reduced size and weight was able to walk over this narrow bridge, but *Nakûli* did not find the distance across very great, and so he jumped it.

Then they arrived at a very large river, where there was a canoe paddled by four toads (*sukkik*).[b] This stream swarmed with a small variety of fish, similar to a sardine, and called *blim* (or *bilim*, *bilam*),

[a] Lit.: "Mother-scorpion," a sort of personified hereafter and heretofore.
[b] According to some Indians this canoe was paddled by a dog.

1: Conzemius M-4, 5 (1921) 1932
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775 which the soul took for sharks (*ilili*). On the opposite side they
773 saw the country of the *Yapti-misri*; every one there appeared to be happy. The souls of those persons who had not led a righteous life were upset with the boat and devoured by the sardines. The wife was taken over in the canoe by the toads, while he managed to swim over.

On the other side they were received by the *Yapti-misri*, a very tall, stout woman with many breasts, to whom the inhabitants came occasionally to suck like babies. She appeared to be rather angry at *Nakili* for having come, and ordered him to go back to the earth again. He implored her to let him remain, as he loved his wife so much and did not wish to be separated from her. She agreed finally to let him stay.

In this country no one had to work; there was plenty of excellent food and drink, and there was no lack of amusements. But after staying there for some time, *Nakili* longed to go back to earth, in order to see his children again. *Yapti-misri* allowed him to go on condition that he would never return to the hereafter until after his death. She placed him in a huge bamboo rod which she deposited on the river. After a while he noticed from the high waves that he was on the sea, and finally a gigantic breaker threw him on the shore, just in front of his own hut.

775 JOURNEY TO THE HEREAFTER (SUMU).—After death the soul undertakes its pilgrimage to *Obul* or *Ubul* (lit.: "mottled dwelling"), that is, the paradise, which is situated under the earth toward the east, where the sun rises.

On its journey the soul is attacked by macaws (*ōā awa*) and moths (*tapam yula*) which attempt to bite it; it defends itself with the aid of two sticks of wood tied together with cotton thread in the shape of a cross, and which are always joined to the deceased person before burial.

Then the soul is met by a gigantic worm, which devours the women who have not always been faithful to their husbands. Men are not molested by this monster, as they make themselves invulnerable by attaching to the body a coat of cockles (*ulamak*).

The road then leads along the abode of a small black lizard living on trees, and called *kasāā*, which tries to catch the soul and deliver it to a toad (*muku*); the latter has a large pot with boiling water on the fire, and throws all the bad people therein. But the soul may easily escape from final destruction by offering some beads to the *kasāā*, who is very fond of such ornaments, and by giving likewise some small present to the toad.

The next stage is a high, slippery hill, called *Uy Asaū*, which has to be climbed. The relatives of the deceased smear the soles of his feet with beeswax (*balas*) in order to facilitate his ascending the hill.

1: Conzemius M-4, 5 (1921) 1932
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This obstacle overcome, the soul finally makes its entry into *Obul*, the land of plenty.*

THE FESTIVAL OF THE DEAD

The festival of the dead (M.: *sikro, siâkro;* S.: *sâ*) is the most important of the bacchanalian orgies of these two tribes. Its real significance appears to be unknown to the large majority of the present-day Indians; it is certain, however, that it has some connection with the journey of the souls of the deceased to the hereafter.

THE SIKRO OF THE MISKITO.—To most Miskito the *sikro* of to-day is only an occasion for merrymaking and getting drunk. Originally only one *sikro* was made for each deceased person, but nowadays the Indians repeat this feast several times in order to have an excuse for a drinking bout. The custom can still be observed among the "heathen" Miskito of the upper Rio Coco and of Honduras. In the remaining districts of the Mosquito Coast nearly all the Indians belonging to this tribe have been converted to Christianity.

The *sikro* takes place about a year after a death, or rather as soon as the field of sweet cassava, planted especially for this purpose, has come into maturity. Although the Miskito make a great variety of intoxicating drinks (*saiaka*), the one consumed on such an occasion is invariably prepared from cassava. The fermented root of this plant is generally kept in casks obtained from the foreign merchants, but in former days the drink was left to ferment in large homemade earthenware vessels (*sumi*). The expenses of the feast are borne by the relatives of the deceased, who will butcher one or two head of cattle for this purpose, but all the neighbors lend a hand at the preparation of food and drink, and they even help at the planting and reaping of the cassava.

All the men and many of the women from the neighboring settlements are expected to come, and they begin to arrive, dressed in their best attire, about sundown on the specified day. The festival lasts until all the food and drink has been consumed, that is, two or three days. The women keep apart by themselves, and do not mingle with the men, except in order to pass the calabashes of drink around from one of the guests to the other. Occasionally both sexes

* The Sumu never kill any of the various creatures which they will have to meet on their final journey. When they deprive a toad of its skin for the making of a drumhead, they do not kill this amphibian, but release it again afterwards, and give it a few berries from a certain tree as a payment for its skin. The parents also admonish their children not to ill-treat animals, especially such as may be useful to them on the voyage to the hereafter. Similar conceptions are met with among primitive Indian tribes in various parts of the Americas who have had little or no intercourse with Christians.

2: Kirchhoff E-4 (no date) 1948
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same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

A shaman may also prophesy the future or determine the route hunters should take in order to find game. By conjuring, a shaman may cause harm to come to people. A shaman may be retained by a person to eliminate an enemy.

1: Conzemius M-4, 5 (1921) 1932
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The men taking part at the *asaŭ ldiwana* had the whole body painted black and wore nothing but the loin cloth. They had to be ceremonially "pure" (*sunu*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *puput* (maize liquor), for every one was afraid of him.

At the *asaŭ ldiwana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŭ al yaŭ*, "I am a man," whereupon his adversary replies *yaŭ bik al yaŭ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

1: Conzemius M-4, 5 (1921) 1932
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whistling and blowing over it for about 5 or 10 minutes. Should he suffer a relapse and undergo another treatment the sukya will demand another fee.

RELIGION: SUPREME BEING, TRIBAL HEROES, SPIRITS, CREATION OF MAN, DELUGE, CHRISTIANIZATION

SUPREME BEING.—The religious system of these tribes has been fast disintegrating for the last generation. Nowadays both tribes believe in the existence of a Supreme Deity, which the Miskito call *Wan-Aisa*, "Our Father," and the Sumu *Ma-Papak* or *Ma-Papaki*, "Our Father" or "Sun-Father." Both tribes also make use of the name *Dawan*, "Master" or "Lord." This conception has probably been borrowed from Christianity; still Exquemelin (Engl. ed.: 251) states that in his days (1671) the Miskito believed in one God. This Deity, which dwells in heaven, is sometimes confused with the various tribal heroes. According to these Indians, God has created the world and the inhabitants, but He does not appear to worry a great deal about the individual being, nor is He able to ward off the various dangers which continually menace mankind; consequently He is not honored with offerings, prayers, worship, or sacrifice. Furthermore, He lives so far away from earth that it is impossible to enter into relations with Him, and He can not be approached by man.

MINOR GODS AND TRIBAL HEROES.—Both the Miskito and the Sumu believe in the existence of a number of supernatural beings, living formerly on earth like man. These are the sun (M.: *yu, lapta;* S.: *ma*), thunder (M.: *aiwani;* S.: *aiwana*), moon (M.: *kati;* S.: *wdiko*), rainbow (M.: *kumadora;* S.: *wayauli, wayuli*), stars and planets (M.: *slilma;* T., P.: *yala;* U.: *ma-baka* "small sun"), the Pleiades (M.: *pupu-wihta;* S.: *kalpas*). According to a Sumu myth a bright planet, called by the Miskito *kati-maya*, "the moon's wife," which is seen just above the new moon, was originally a girl, who was raised by her finger tips by *Udo*, the moon god (Heath, c: 77). These various heavenly bodies are supposed by the Sumu to travel in canoes, a belief which is also held by the Cuna of Panama.[80]

Some of these supernatural beings are in charge of the elements and are responsible for the great calamities which appear occasionally. The god of the wind and of the air, called by the Miskito *Prahaku* or *Asbiya*,[81] sends the hurricanes and the great inundations which destroy the plantations and kill the livestock. His representative is

[80] Erland Nordenskiöld, Les Rapports entre l'Art, la Religion, et la Magie chez les Cuna et les Choco. Journal de la Société des Americanistes de Paris, tome XII, Paris, 1920, p. 150.

[81] Cf. "obi" or "obeah," a species of sorcery practiced among West Indian Negroes.

1: Conzemius M-4, 5 (1921) 1932
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the rainbow, which the Panamaka Sumu sometimes call *walasa unisa*, "the devil is vexed." At its appearance the Indians hide their children in the huts so that they may not see it nor point at it; by the latter act the outstretched arm or hand is supposed to become crippled and covered with terrible sores.

Thunder (M.: *alwani;* S.: *alwana*) is sometimes confounded with God among the heathen Miskito and Sumu. According to some, he created the world and governs it by appointing the seasons; others say that he lived formerly on earth and was the first man. When he thunders, it is to warn man that a flood is coming. From an Ulwa Indian, originally from the headwaters of Rio Grande, I obtained the following story, which I propose naming—

The Origin of the Kiawa Rocks

God (*Mo-Papakki*) sent Thunder (*Alwana*) as his representative to the earth to instruct the people in agriculture and in other arts and crafts. One day while Alwana was absent from home an evil spirit, named Kiawa, came and carried off his wife.

A parrot (*wardiwa*) informed Thunder of this fact while the latter was planting pine trees on a big rock at a place called to this day *Alwana kuma-ka rumpak* (in Miskito, *Alwani di-sal-ka lulkan*). This locality is on Rio Quiguasca, the upper course of Rio Grande; pine-covered rocks and low hills extend there to the very edge of the river.

Upon hearing what had happened, Thunder left his work in order to wrest his wife from Kiawa. He found the latter at his home on Rio Iya, a tributary of Rio Tuma. Kiawa was drunk at the time, but he was a powerful giant, and Thunder was unable to master him at first.

When the fight began Kiawa turned into a boa constrictor (*wyail*) and swallowed his own wife, in order to prevent her from falling into the hands of Thunder. The two enemies then vied with each other in growing tall, in order to reach the clouds. Each in turn outgrew the other, until finally Thunder's head overtopped the clouds, which enabled him to press his enemy to the ground. With his long machete (*masat*) he then cut Kiawa in pieces, thereby restoring to life all the people who had been swallowed by the giant. The various parts of the latter turned into rocks which are visible on the upper Rio Iya, and are still known by the name Kiawa. The Indians claim that sometimes these rocks bleed, and that certain parts of the giant, as his head and navel, may still be distinctly seen.[70]

Spirits.—More powerful than God or the various tribal heroes are the numerous evil spirits (M.: *wlasa, lasa;*[71] T., P.: *walasa;* U.:

[70] Heath (b: 419) gives a slightly different version of this story.

[71] Dampier (I, 9) already states that the devil is called *Wallessa* by the Miskito.

1: Conzemius M-4, 5 (1921) 1932
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nawal"[72]), which inhabit the hills, caves, deep water pools, etc. They are extremely malevolent and they are ever ready to injure the people, causing disease or death. They are especially dangerous after sundown, when the fear of them makes a coward of the most daring and courageous Indians.

The Indian has a natural reluctance to reveal his religious ideas, especially such as he suspects to seem ridiculous to a stranger. It is therefore very difficult to obtain reliable information from them pertaining to this subject. At the death of a person the material body undergoes dissolution and one or more spirits are set free and roam about doing mischief, until they are directed by the sukya to the Hereafter. Animals likewise have spirits, or they may be possessed by evil spirits.

Conspicuous hills are generally haunted by evil spirits, [illegible] latter are said to have carved the petroglyphs found at certain large river falls. Peculiarly shaped rocks are supposed to have been formerly human beings, who have become petrified, generally as a punishment.[73] Not only may sentient beings be changed into rocks, but they may also originally have issued from them. A Sumu legend traces the origin of that tribe to the Kaunapa Hill on the left bank of Rio Patuca, to a place where petrified navels are said to exist.

Trees and plants appear to be animated by spirits (M.: *lilka;* T., P.: *wayani;* U.: *wayaka*), which affect their growth and the ripening of their fruits. In order to increase the yield of a fruit tree, or to render barren trees productive, several objects are placed on their branches after having been blown upon (M.: *yabakan*) by the sukya. Vegetal attraction charms, which are carried for good luck in the various walks of life, would seem to point toward an original belief in plants possessing associated spirits.

Indians will keep at a certain distance from spirits and do not look at them nor point to them, nor even talk of them, as they might materialize, for, "speak of the devil and he is sure to appear." They even refuse to look at certain places haunted by evil spirits, and if they have to pass at close distance they will turn away the face in an opposite direction.

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[72] This word has evidently a close philological connection with *Naualli*, the name of a magical high priest of the Aztecs; he was celibate and was supposed to assume animal shape at will. From his name is derived the term "nagualism," a species of sorcery still existing among the ignorant Ladinos in certain regions of Central America. *Nawa* or *nawah* is also the Sumu name for "puma" or "jaguar." Cf. also *naual* "sorcerer" and *naual-ik* "to predict, to enchant," in the Quiché language of Guatemala.

[73] On the right bank of Rio Coco, opposite Yaluk Hill, there are some rocks which are believed to be the petrified remains of a great Sumu sukya, named Panamaka, who lived on the said hill.

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The spirits may come to the neighborhood of human habitations in their anthropomorphic form and try to seduce Indians of the opposite sex, and abnormal children will be the result of this intimacy. Monstrosities among the animal and vegetable world are also held to be spirits. Just like snakes, these spirits are said to have a great passion for women at the menstrual periods.

CONNECTION OF SPIRITS WITH THE SILK-COTTON TREE.—The silk-cotton tree (M.: *sisin;* T., P.: *panya;* U.: *paniki*) is said to be the abode of the spirits of the departed, and no one ventures under it during the night. It must not be cut down, as by such an act the spirits would be robbed of their favorite resting place, and they would not fail to revenge themselves. Should it be absolutely necessary, however, to cut down a silk-cotton tree, the wrath of the spirits may be avoided by burying something at the foot of the tree in the shape of an offering, as food, red peppers, money, etc. When the tree has been felled, the object in question may be recovered. On Rio Lacus, a southern affluent of Rio Coco, a Sumu used for this purpose two small dolls or puppets (M.: *yapti;* S.: *ditalna*), which he had obtained from the sukya. This procedure, which savors of African origin, is the only case of this sort which I have met among the Sumu, but the habit in question is common enough among the Miskito.

The Indians also claim that a dugout made from the silk-cotton tree will groan continually during the night, and that at the same time it will travel with tremendous speed. A similar plaintive sound is said to be emitted during the dark by mattresses or pillows stuffed with the down adhering to the seeds of the tree. For the above-named reasons the credulous Indians make no use whatever of the haunted tree.

The Creoles and the West Indian Negroes dread this tree even more than do the Indians; according to them the spirit of the deceased, which they call "shadow" or "duppy," leaves the grave on the third day after death in order to roam about the woods, especially around the ceiba or silk-cotton trees. Some believe that these superstitions concerning the tree may have been taken from the Africans; still, the Maya of Yucatan and the Quiché of Guatemala, who have had practically no intercourse with Negroes, hold beliefs regarding the silk-cotton tree similar to those of the Miskito and Sumu.

CREATION OF MAN.—As stated above, the Miskito confound Thunder (*Alwasi*) and God (*Wan-Aisa, Dawan*) sometimes with one another, and both of these supernatural beings are looked upon as the creator of man and the world in general. The Sumu, however, consider the Sun-god (*Uhubapat*) as the Almighty God and Creator of everything, and in former days are supposed to have worshiped him.

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ordinary mortals. Thanks to these supposed powers, he is feared and respected far and wide. Such a state of affairs is occasionally very injurious to the Indian community as a whole, but in general abuses on the part of the sukya are not common.

Besides curing the sick, the advice of the sukya is sought in many instances. He is consulted in order to find out the whereabouts of a lost or stolen object, and he furnishes remedies to cure ill luck, to influence the heart of a person of the opposite sex, to increase the valor and courage of a man, and the like. He will inform the hunter how to proceed in order to secure plenty of game, for he has generally a good knowledge of the instincts and habits of animals. If he is unsuccessful, he claims that his client has transgressed some prescription.

Some of these shamans have some knowledge of astronomy; others imitate the voice of other persons or of animals and birds, and some appear to be clever ventriloquists. They foretell the death of a sick person, and help artificially by means of poison on the specified day, in order to strengthen their reputation.

The sukya will also be asked to harm an enemy by casting an evil spell over him. The usual method followed by the Miskito sukya is to fire a gun in the direction of the person upon whom he wishes to inflict injury. His Sumu confrère will send disease or death by mistreating or stabbing an object, usually a doll or puppet (M.: *yapti;* S.: *ditalna*), made of white tunu bark, and supposed to represent the intended victim. Some of these sorcerers are also said to transform themselves into a snake or jaguar and then harm their enemy.

There are good and bad sukyas, who are sometimes at feud with each other. In his own village the sukya is generally said to be good, but in the neighboring settlement there is a bad one, whom he has to fight and send away the evil spirit which the latter despatches in order to cause disease and death. The bad sukya will, for instance, send an animal or bird with poison to the neighboring village, but his confrère from the latter settlement sees it coming and sends it back. The animal goes hither and thither, until finally the "stronger" of the two opponents wins.

INITIATION OF THE SUKYA.—The choosing of his career by the sukya is supposed not to be voluntary. A person whom destiny has picked out for this high office is said to come under the influence of some spirits, from whom he is unable to deliver himself. During the night he acts like an insane person; he gets up from bed and talks with invisible beings in a mysterious "spirit" language.

In this state he makes prophecies, and if these come true his friends will urge him to become a sukya. He then prepares himself for his career through fastings, vigils, and other means of achieving exhaustion and the novice will be reduced to a skeleton. During this

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time he will come under the influence of some sort of tutelary spirit which henceforth will act as his protector; this may be the spirit of a person, animal, plant, hill, cloud, star, etc., or some other kind of supernatural being, by whose intermediacy the would-be sukya may converse with the evil spirits. This conception of guardian spirits is found in large areas of America, and it has probably not originated from the tutelary angel of the missionaries.

The candidate is then ready to exercise his profession, but on the day of initiation his food must be prepared according to a manner prescribed by custom. It must be cooked by a young boy or girl, not yet arrived at the age of puberty; a slender hardwood tree, called *liwdi*, which grows very sparsely in the forest and burns readily in the green state, must be used as firewood.

The sukya is obliged from time to time to strengthen his powers by religiously abstaining from certain food and sexual intercourse, and in other ways lead a life of self-denial.

Among the Sumu any candidate for priestly and medical honors must perform the fire dance; this fiery ordeal must also be repeated occasionally in order to strengthen the connection with the unseen powers. A big pile of *liwdi* wood is made in a cleared spot in the bush and the whole is covered by a thick layer of bijagua leaves. Fire is then put to the whole, and when in full blaze, the sukya issues from the forest. He has the whole body smeared with black paint, and is entirely naked save for a loin cloth. He then walks upon the pile and remains there standing quietly until the wood is partly consumed. Then he orders the fire divided into four parts, and walks from one pile to the other with his bare feet until all the wood is burned. Strangers are never allowed to witness this performance. The Miskito greatly respect the Sumu sukya for this act which their own sorcerers are unable to perform.

Roberts states that the fire dance is also done by the sukya of the San Blas Indians (Panama), and that the effects of the fire are resisted by some powerful antidote extracted from vegetable fibers. This ordeal is also performed by the shamans of Raiatea (Society Islands), Kandavu (Fiji Islands), and of a tribe in British India, but it has apparently not been observed in other parts of the world.

THE OKULI.—The okuli[48] is the highest shaman among the Miskito and there never should be more than one at a time. The Sumu do not have any sorcerer ranking above the sukya, but many of them recognize the okuli of the Miskito.

The okuli is said to be a special representative of *Alwani*, the thunder-god, or of *Aubiya* (or *Prahaku*), the lord of the air, and is supposed to control the elements. He is much more powerful than

[48] Among the Bribri Indians of Costa Rica *oke* is the name for a sort of shaman.

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MISCELLANEOUS BELIEFS REGARDING FICTITIOUS BEINGS SAID TO INHABIT THE FOREST AND THE WATER

Living in dark and gloomy forests, the limits of which are unknown to them, the ideas of the Indians naturally turn toward the mysterious and wonderful, and they people in their imagination the unexplored regions of the country with fabulous monsters, or *unta dukya* as the Miskito call them generally. 776

Dwarfs.—In certain parts of the forest may be found some dwarfs (M.: *swein, almuk-sirpi;* S.: *asañ mōikni, asañ mōihka*) of the size of children, but they are considered entirely harmless, and an encounter with one of them is even held to bring good luck.

Wandering Jew.—The belief of the existence of a wandering human being, the *tawisti seri-ha* or *sawa-seri*, so named by the Paya, has also spread to the neighboring Twahka, who have translated the name into *tiñ-suba*, but it is unknown to the other tribes; the Miskito of Rio Patuca, however, appear to call this mysterious being *tismila*. This man continually travels through the world with one of his hands placed in a cooking pot from which he is unable to extricate it. From time to time he beats with the pot against the trees, thereby producing a deep thunderlike noise, in order to break the vessel and liberate himself, but all his efforts are in vain. When he still was a boy, he was in the habit of eating the best part of the food before mealtime, leaving only the cassava and bananas for the other members of the family. His parents frequently scolded him for doing that, but he would not listen to them. One day the cooking pot closed up at the very moment he had his hand inside, and he was unable to withdraw it. Since that time he travels continuously through the bush like the Wandering Jew.

Peccary owner.—The peccaries, especially the variety called warree, are said to have a keeper or owner (M.: *wari dawan;* T., P.: *siwi daniwan;* U.: *sawi dakawan*), who inhabits the caves of the interior, and occasionally retreats thereto with all the animals under his custody. In former times he is said to have been visible sometimes, accompanied by a drove of very fierce, large, white warrees. In order to guide his animals to a good feeding ground, he places with each herd a pet bird (M.: *wari yula;* T., P.: *siwi turukma;* U.: *sawi turukma;* these words literally mean "companion of the warree"). This bird, which may generally be found around a drove of peccaries, feeds probably on the ticks or other parasitic insects living on these animals. The Indians do not dare to kill it, as by such an act they would incur the wrath of the peccary owner. Some details pertaining 776 825

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to this fictitious being are given by Bell (b: 221–224). I submit herewith a Sumu story dealing with the peccary owner, which I propose naming:

The Adventures of the Peccary Hunter

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A Sumu went out to the bush to hunt the white-lipped peccary (*Tayassu* sp.). Suddenly he came upon a drove of a white variety, called *sduakaya*, with very long tails and tusks. All of them were very fat. Our Indian had never seen a specimen of this variety before, but he had heard of its existence from the older people, who had, however, never succeeded in killing one.

He stalked upon them, but at the very moment he got his bow and arrow ready to shoot the whole drove made off at great speed. He followed their trails, determined not to go home without one of them. After a while he caught up with them, and saw them feeding on the fruits of the hog plum tree (*Spondias lutea* L.), but again they made off all together when he was at the point of sending an arrow at them. This was repeated again and again, and our Indian was unable to make use of his arrows. Still he kept on following them.

Suddenly he saw the whole drove disappearing into a cave. He followed, although it was pitch dark inside, for he could smell and hear them. After a while he came to a wall of solid rock which blocked his passage. He then made a small incision under his tongue and applied a little blood crosswise upon the rocks. Immediately the latter receded and he was able to proceed. Again he could hear and smell the peccaries in front of him. This was repeated several times.

Finally the Indian saw a streak of light ahead of him and directly he found himself outside the cave in a strange country, which abounded in the various varieties of peccaries. The large white kind, the *sduakaya*, must have been the favorite food of the inhabitants, for in every house they were preparing a specimen for the table. The people were not friendly toward our Sumu, and they resented his having come to their land. He explained to them how it all happened, and that he was anxious to secure some meat for his wife and children. They told him then that they were the owners of all the peccaries, and that occasionally they sent some droves to the Sumu country, so as to enable the inhabitants there to have some meat to eat occasionally. But the white peccary (*sduakaya*), they proceeded, "is for our exclusive use and for that reason the Sumu have never been able to shoot any of them." The people fed our Sumu and gave him a whole white peccary to take back home to his family. But they warned him not to mention anything about his adventure, as that would cause his immediate death. Then he was told to close his eyes, and some one took him by the hand and led him away. After

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a little while, feeling himself alone, he opened his eyes, and looking around, he found himself only a few steps from his own house.

Upon getting home, his wife wanted to know where he had been so long. He refused to tell the truth for fear of the revenge of the people from the peccary country, and told her that he had been lost in the bush. But she noticed that he was hiding the truth and kept on insisting that something extraordinary must have happened for his having succeeded in killing a *sĕuakaya*.

Finally he agreed to tell. He sat in his hammock, while all the neighbors surrounded him to hear the details of his strange adventure, and then he proceeded to narrate everything that had happened to him since he left home. But the moment he finished his story he died.

WITCHES.—Certain people of either sex are supposed to be greatly addicted to witchcraft, and to be able to transform themselves at will into owls or "lechuzas" (M.: *imi yula* or *kimi yula;* S.: *yala mŏlh*[11]).

Some bad people transform themselves into a smaller species of owl (T.: *yarak;* U.: *sŏl*) and in their zoömorphic form introduce themselves during the night into the huts of their enemies, when the latter are asleep, in order to carry off the small children. The Miskito do not participate in this belief.

CYCLOPS.—In the bush lives also a curious being, shaped somewhat like a giant human being, but having a head similar to that of a dog. It has only one eye, while its large mouth is at the navel.

WATER NYMPH.—The mermaid or water nymph (M.: *liwa;* T., P.: *was molhni;* U.: *was sirdŭ*) is an evil water animal, which occasionally causes snags and strong ripples where the water otherwise is very smooth. It drives the fish away so that the Indian can not catch anything, and it incites the alligator to attack the canoes and upset them. It also assumes the shape of a beautiful woman and walks on land to entice the young men down to the waterside, when suddenly it pushes its victim into the water and devours it. Its head is that of a human being, but the body resembles that of a fish. This monster is also said to inhabit the sea, where it occasions waterspouts and hurricanes; the Miskito living at the coast call it also *kabo wlaska* "sea spirit."

WAIWIN OR WAIWAN.—This name is applied by Miskito, Sumu, Rama, and Creoles to a black, doglike bush animal, with a nose shaped like that of the large anteater and with fiery eyes similar to balls of fire. It corresponds approximately to the "cadejo" of the Ladinos. Its claws rattle on the ground as it runs along with great swiftness. It spits fire and does not do any harm if left unmolested, but will throw down on the ground any one trying to stop it. There

[11] Lit., "people of the stars."

2: Kirchhoff E-4 (no date) 1948
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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

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773 same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Jicaque* believe in two benevolent deities and a female
● 776 god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

775 The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

778 The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with
789 innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

756 Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may
755 succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs
[778] knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

756 A shaman may also prophesy the future or determine the route hunters
[787] should take in order to find game. By conjuring, a shaman may cause
[754] harm to come to people. A shaman may be retained by a person to eliminate an enemy.

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226 At night torchlights are used to attract the fish and induce them to rise to the surface, where they are killed by a stroke with the machete; the latter weapon is also used to chop the "sleeping" fishes, which are easily detected with the torches.

Along the river banks and among the rocks the Indians also "feel" for certain fishes and for crustacea.

[262] 225 CATCHING ALLIGATORS.—The tail part of young alligators and crocodiles is also occasionally eaten. These ugly reptiles are caught with the aid of large hooks. Young (61) gives the following account of the manner practiced by the Sumu to catch these repulsive creatures but, needless to say, this applies only to young specimens: "A Sumu Indian, when he sees an alligator near the banks of the river, will boldly swim under water, carrying a native-manufactured rope with a noose in it, until he reaches the creature; he will then dexterously affix the noose to its leg; his companions at the same moment, having hold of the other end of the rope, pull it vigorously, and the alligator is speedily drawn out and despatched."

226 CRUSTACEA AND MOLLUSKS.—Lobsters, crabs, and mollusks (conchs, large whelks, mussels, oysters) are also gathered by the women, and form an important item of food. In the larger lagoons two kinds of edible oysters are common; the smaller one, or mangrove oyster, attaches itself to the roots of the mangrove tree, while the larger one occurs in banks in certain parts of the lagoons.

172 A small bivalve mollusk, known locally as "cockle" (M. and S.: *ūhi*), appears to have played in former days an enormous rôle in the food supply. A number of refuse heaps, up to 20 feet in height, consisting of cockle shells intermingled with fragments of domestic utensils of stone, bone, or pottery, have been discovered on the western shore of Bluefields Lagoon. Two of such *tumuli* were examined by the writer on Cucra Point in 1921. They consisted nearly exclusively of the above-mentioned small cockle shell, which mollusk is found in the shallow water of the lagoon. Oyster shells were rare, although extensive oyster banks exist also in certain parts of the Bluefields Lagoon. These shell mounds (shell heaps, kitchen middens, kitchen débris), called also by the Danish word *kjøkkenmødding*, indicate undoubtedly old dwelling sites; from their great size it is evident that long periods of time must have been required for their accumulation. A number of them were also found at the site of Bluefields and likewise a little to the north; they have been carried away to "metal" the streets of that town. See also Bell (a: 260; b: 18), Wickham (b: 251–252), and Spinden (532–533).

226 777 FISHING CHARMS.—Certain charms are said to be very efficacious at fishing. Stones found in the stomach of fishes are highly valued, as their possessor will have good luck in catching that particular species of fish. Heads and spines from the larger species are also

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kept in the hut for that purpose. When the Indians catch the palometa fish (M. and S.: *triau*), they return to the water with the bones and throw them in the same spot, believing that by so doing they will always be favored with good luck when fishing for palometa. In case a woman *enciente* eats this fish, however, it will not bite any more during that season.

HUNTING AND FIGHTING IMPLEMENTS

Weapons naturally play a great rôle among primitive people, for they are used to defend themselves against the wild animals of the forest as well as against their own kind, which is even more dangerous than the beasts of the jungle. Nowadays they are not used any longer in warfare, for the various tribes are at peace, but they still furnish the Indians with the means of procuring a large share of their food supply.

DEFENSIVE WEAPONS.—Defensive weapons have gone out of existence since intertribal wars have ceased, but in former days the Miskito employed round shields (*kabaika*) of light wood or of tapir hide. Armors of plaited reed are also reported; they were covered with jaguar skin and ornamented with feathers. The northern Miskito used a breastplate of twisted cotton like that of the Mexicans (Bancroft: I, 723).

BLOWGUN.—The blowpipe or blowgun is said to be still found among the Ulwa of Rio Escondido, but the present writer was unable to obtain any details pertaining to that arm. Lehmann (c: I, 503), however, gives the name *makar* (compare Bribri *mákol*) for the blowgun among the Ulwa of Rio Murra, a northern affluent of Rio Escondido. According to Bell (b: 232) the Indian children had little blowguns to blow little balls of black wax through, in order to kill wasps, butterflies, and small house lizards. They were made from a reed, called *brasirpi*, the joints of which are about 1½ feet in length.

The use of the blowgun as a hunting and fighting implement would necessarily point to an acquaintance with arrow poison. In fact, Benito Garret y Arlovi in a report from the year 1711 (Peralta, b: 59) states that some of the Miskito used arrow poison. Bancroft (I, 722–723) says that these Indians employed the juice of the manchineel tree (*Hippomane mancinella* L.) to poison arrows and darts, but he fails to indicate the source of his information. It is well known that the Chocó and Tule (Cuna, San Blas) Indians of Panamá, like the Caribs of the Lesser Antilles, poisoned their arrows in former days by dipping them in the milky juice of that tree. I have not seen the tree in question on the Mosquito Coast, nor learned its native name; Ziock (69, 237), however, calls it *liwakumya* in the Miskito

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224 coarse and unhealthy and even is taboo. The Miskito call it *tilba*, which name is already mentioned at the end of the seventeenth century in the form *tilbu* (M. W.: 311).

LIZARDS.—The largest lizard is the green iguana (*Iguana tuberculata*) which is generally shot while feeding on the river banks or in the branches of some overhanging tree. Sometimes it tries to escape by dashing into the water, where the Indians attempt to catch it by diving after it. It is sometimes kept alive by the Indians until required for food. For this purpose they break the thighs and arm-bones, and put the backbone out of joint; or else they twist the legs and tie the front ones over the back and the hind ones over the tail by their own sinews. The poor animal is thus unable to run away. The eggs of the iguana are also highly esteemed.

BIRDS.—Various species of guans (*Penelope*, *Ortalis*, *Pipile* [40]), the yellow-crested black curassows (*Crax* sp.), mountain hens (*Tinamus* sp.), quails (*Ortyx* sp.), partridges (*Odontophorus* sp.), pigeons (*Columba* sp.), and wild ducks (*Cairina moschata*) are esteemed as game birds.

224 RETURN FROM THE CHASE.—After the chase the game is carried on
482 the back to the canoe. When a large animal, as a peccary, has been killed each fore and hind foot are tied together with the aid of withes. The Indian, putting his arms through the loops thus formed, with the beast's head downward, carries it on the back, as if shouldering a knapsack. A strap passing over the forehead may also be attached to help support the load. If the hunters are unable to carry all the game at one time the remainder is hung on the branches of some tree, to keep it out of reach of prowling animals.

224 Arrived at his settlement, the Indian merely takes his arms and paddle and walks home, sending his wife down to the waterside to fetch the game. The hair of the latter is then singed by a fire made in the open. The neighbors, who are generally near relatives, receive a share of the meat.

261 Then a big pot is put on the fire, for the Indians do not think of the morrow and, if possible, consume all the meat at once. The women and children do not have patience enough to wait until it is cooked, but they cut off small slices, which they roast over the hot coals and eat, with a few bananas or plantains. If they are unable to dispose of all the supply on the first day the remainder is barbecued without salt over a slow fire. (See Culinary Arts.)

224 HUNTING CHARMS.—Many charms are used for luck in hunting.
777 Stones or pebbles, found in the stomach of certain animals, are

[40] The large guan (*Penelope* sp.) is called *kwamu* by the Miskito, a name found already by M. W. (311) in the form *quaumoco*.

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supposed to attract the same species and entice it within gunshot.[80] The bones, teeth, and skulls of animals killed in the chase are said to have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaligui*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal weapon of both tribes under consideration. (See Hunting and Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time great festivals, called *asaŭ ldiwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

[80] There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

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liquid to the people present, but none of them dares to inspect it, not being immune from its effects as are the poison doctors and the foreigners. During the last two decades the fear of buried poison has spread to the Tawira-Miskito and to the Sumu; these Indians believe that the Miskito from Rio Coco are especially dangerous on account of their habit of killing their enemies with the aid of buried poison. Certain charms, as, for instance, the bitter antidote bean (*Ferillea cordifolia*), are occasionally carried to ward off the effects of such witch poison.

DREAMS.—The Indian pays great attention to dreams (M.: *yapri sdukkan;* T., P.: *amana;* U.: *amiñna*). When he dreams that he has killed plenty of game he is certain to have good luck in the chase on the following morning. If he dreams of an accident he refuses to leave the settlement during the next few days. When he dreams of strangers, he expects a visit in the near future. The sukya, while curing a sick person, invokes friendly spirits in order to obtain from them during the dream information regarding the nature of the illness.

HAUNTED TREES.—The silk-cotton tree (see Religion, etc.) and the various species of figs (*Ficus* sp.), especially the giant chilamate or higuero, are said to be haunted. The Indians and Creoles believe that these fig trees flower only during the night and hold the fig to be the true fruit. Any one daring to go under the tree about midnight will be able to see the blossom and after that will be favored with good luck in anything he may attempt. This belief is shared by the ignorant Ladinos, who claim that the fig trees flower only on Good Friday night and that a blanket spread under them at midnight will be covered with small blossoms on the following morning.

MAGIC AND SORCERY: SUKYA, OKULI, SPIRITIST, OBEAH OR VOODOOISM

SHAMANS IN GENERAL.—Among these credulous people a great influence is exercised by the shamans, of which there were formerly only two categories, the *sukya* and the *okuli*. Of the latter there should be only one at a time, but of the former there is one in almost every larger village. In recent years two other sorts of shamans, the *spiritist* and the *obeah man*, have appeared on the coast.

These shamans play a great rôle in the life of the Indians, for they act as medicine men, doctors (see Hygiene: Diseases and their cure), augurs, conjurers, magicians, wizards, diviners, rain makers, spell-binders, priests, preachers, teachers, guides, advisors, counsellors, depositaries of tribal traditions, and the like. Their opinions were formerly of the greatest weight in tribal assemblies. Still, there is nothing characteristic about them in the way of ornament or dress,

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The spirits may come to the neighborhood of human habitations in their anthropomorphic form and try to seduce Indians of the opposite sex, and abnormal children will be the result of this intimacy. Monstrosities among the animal and vegetable world are also held to be spirits. Just like snakes, these spirits are said to have a great passion for women at the menstrual periods.

CONNECTION OF SPIRITS WITH THE SILK-COTTON TREE.—The silk-cotton tree (M.: *sisin;* T., P.: *panya;* U.: *paniki*) is said to be the abode of the spirits of the departed, and no one ventures under it during the night. It must not be cut down, as by such an act the spirits would be robbed of their favorite resting place, and they would not fail to revenge themselves. Should it be absolutely necessary, however, to cut down a silk-cotton tree, the wrath of the spirits may be avoided by burying something at the foot of the tree in the shape of an offering, as food, red peppers, money, etc. When the tree has been felled, the object in question may be recovered. On Rio Lacus, a southern affluent of Rio Coco, a Sumu used for this purpose two small dolls or puppets (M.: *yapti;* S.: *ditalna*), which he had obtained from the sukya. This procedure, which savors of African origin, is the only case of this sort which I have met among the Sumu, but the habit in question is common enough among the Miskito.

The Indians also claim that a dugout made from the silk-cotton tree will groan continually during the night, and that at the same time it will travel with tremendous speed. A similar plaintive sound is said to be emitted during the dark by mattresses or pillows stuffed with the down adhering to the seeds of the tree. For the above-named reasons the credulous Indians make no use whatever of the haunted tree.

The Creoles and the West Indian Negroes dread this tree even more than do the Indians; according to them the spirit of the deceased, which they call "shadow" or "duppy," leaves the grave on the third day after death in order to roam about the woods, especially around the ceiba or silk-cotton trees. Some believe that these superstitions concerning the tree may have been taken from the Africans; still, the Maya of Yucatan and the Quiché of Guatemala, who have had practically no intercourse with Negroes, hold beliefs regarding the silk-cotton tree similar to those of the Miskito and Sumu.

CREATION OF MAN.—As stated above, the Miskito confound Thunder (*Alwani*) and God (*Wan-Aisa, Dawan*) sometimes with one another, and both of these supernatural beings are looked upon as the creator of man and the world in general. The Sumu, however, consider the Sun-god (*Uhubapat*) as the Almighty God and Creator of everything, and in former days are supposed to have worshiped him.

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The men taking part at the *asaŭ ldûwana* had the whole body painted black and wore nothing but the loin cloth. They had to be ceremonially "pure" (*sumu*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *puput* (maize liquor), for every one was afraid of him.

At the *asaŭ ldûwana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŭ al yaŭ*, "I am a man," whereupon his adversary replies *yaŭ bik al yaŭ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

3: Pijoan D-5 (ca. 1945) 1946
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of quarrel between two women. The fact remains that very little wrong-doing exists among the Miskito since once a wrongdoer is found out he loses the respect of his community and usually moves to another locality. It a debtor refuses to pay or refund an object or money borrowed, the creditor informes the village of this fact and he can go to the plantation of the debtor and pay himself in provisions without risk. Such pressure usually causes the debtor to make goods his debt.

In rare cases today poisoning is used to exterminate an enemy. This is accomplished by the use of poisonous extracts from plants, alligator gall, or cyanide stolen from the mines. If, however, an Indian shoots his enemy, he must likewise follow him to death. In certain cases, if an Indian has been insulted and cannot collect payment, he commits suicide, wherepon the offender must do the same. In most instances the threat in itself brings apology and payment. In general there is little crime among the Miskito.

The Indians show great reserve, are relatively silent, honest and generally reliable. Stinginess is considered the worst vice and foreigners who bestow gifts are known as good men. They are not quarrelsome. Recent contacts with foreigners has increased their shrewdness and they are less shy than they were years ago.

Members of the family address each other according to sex and relation, such as mother, father, daughter, brother, etc. Each has a name given for some peculiarity. Thus, an infant receives no name until some characteristic is noted.

The mentioning of a deceased person's name is taboo and is a direct insult to refer to the person in the presence of relatives. Husband and wife call each other *mayi*, my consort; before a child is born to them he calls her *kika*, girl, while she calls him *wahma*, young man. After a child is born they often call each other *luhpi yapti*, my child's mother, and *luhpi aisa*, my child's father. *Mahma* or *masa* are used to address a son or brother, whereas *kika* or *misis* refer to daughter or sister. Old men and women are called *dama*, grandfather, and *kuka*, grandmother. The common form of salutation is *naksa* and occasionally *nakki sma* (how are you?) The other replies *aiñwa sna* (I am well). When they take leave the expression is *aisabi* (we will speak again).

DWELLINGS

The villages *(tawan)* are located chiefly on the banks of waterways, rivers and lagoons. The reason for this may be twofold. First the waterways form the chief source of transportation by boat and secondly agriculture and wild fruits can be developed and secured near

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catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

THE SPIRITIST.—A new movement, not unlike the nyalism among Jamaican Negroes, has appeared among the Christianized Miskito during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito as *pirit-uplika* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

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these masks are known by the general name of *yapti*, "mother," yet one is male and the other female, while the third one (if there be one) is said to be the young. These figures are supposed to represent the spirit of some animal, it appears, and they had originally perhaps some totemistic significance. Of the various figures which may appear at a *sikro* I have recorded the following: *Twdina* (sawfish) *yapti*, *ilili* (shark) *yapti*, *krikam* (sea gull) *yapti*, *tilba* (tapir) *yapti*, *kyaki* (agouti) *yapti*, *pura* (above, over?) *yapti*, *sikna* (banana) *yapti*, and *balbal* (cassava roasted in the ashes?) *yapti*.

The writer was present at a *sikro* celebrated in 1921 at a Miskito village situated at the mouth of Rio Plátano (Honduras), at which the symbol of the *twdina-yapti* appeared. The two large figures were said to be the father (*dieu*) and the mother (*yapti*), while the smaller one was the child (*lukpya*). Each one of these three figures was surmounted by a bar of balsa wood painted in red and black, and provided with teeth on each side so as to simulate the bill of a sawfish (*twdina*). On the larger figures this bar was about 4 to 5 feet long, 5 to 6 inches wide, and 3 to 4 inches thick, while the small one measured only 3 feet in length and 4 inches in width.

At another *sikro*, celebrated in the presence of the writer in 1921 at Tausin, on an island in Caratasca Lagoon, there appeared only two figures, male and female, of practically the same size, and called *pura-yapti*. The bars of balsa wood surmounting the masquerade dress measured about 3 feet; their upper part was carved in the semblance of a human head, on which an old palm leaf hat was placed. Sticks inserted at right angles represented the arms. Both figures were dressed and painted partially in red and black, and had wooden pipes in their mouths. The following morning the boys from the village were running about and playing with these masquerade dresses.

After midnight, when the huge quantity of mishla has produced its effect, the men become very noisy and quarrelsome, and their actions are more or less irresponsible. It is disgusting to see them vomit on the floor and then go and drink again. Old grudges and rivalries are revived, old grievances raked up, and fist fights occur on the slightest provocation. Fortunately the women collect and hide all the weapons at the beginning of the orgy, which fact is already mentioned by Dampier (I, 10), and the fighters can not do each other great harm. Besides, the women try as hard as they can to reconcile the quarrelers, but owing to the state of excitement in which the men are, their mediation is often rewarded by blows. Finally the drinkers tumble down and remain on the ground as they fall. These festivals, however, never degenerate into the wild

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and indecent scenes which occasionally take place at the "wakes" of the Negroes who have settled on the Mosquito Coast.

THE SAU OF THE SUMU.—The various Sumu tribes call the festival of the dead by the name *sa̱u*, which word also means "earth," "ground," "country," "world"; the Bawihka, however, call it *sikro*, as do the Miskito, and like the latter used to carry animal masks on that occasion.

The following details apply to the *sa̱u* of the Twahka and Panamaka, the writer having been unable to obtain reliable information pertaining to that of the Ulwa. The intoxicating drink for this occasion is prepared from maize and is known by the name *pupui* (lit.: "gray"). All the guests are smeared with black paint in such a manner that they are not recognizable. Members from other tribes are not admitted, but all the young Sumu from far away are expected to come. The females, being always connected with ceremonial impurity, are excluded from the festival itself, but they remain in a neighboring hut to prepare food and drink.

Before the beginning of the festivities the sukya goes to the dead person's grave and deposits there a calabash of *pupui*. The drink is said to be consumed by the buried person and enter the latter's body by way of the navel. To this calabash the sukya attaches the extremity of a ball of cotton thread, which has been spun by the female relations of the deceased. Then he repairs to the hut where the *sa̱u* is to take place, unwinding the thread as he goes along, and carrying it over the lower tree branches, for it must not touch the ground. If a river has to be crossed, a little canoe with a paddle is tied there to the bank. The distance from the grave to the house may at times reach over several miles. This custom is also found among the Talamanca Indians of Costa Rica and in other areas of both hemispheres.

During the night the sukya, who is the principal actor at the *sa̱u*, practices incantations, and the spirit of the deceased appears, having found its way by the above-mentioned cotton thread. It is not visible to anyone but the sukya, who converses with it in a mysterious language and gives it the final instructions to be observed for the safe entry into the land of hereafter. Then the supernatural visitor departs. The feast lasts from two to three days, that is, when the thread is found to be broken, a sure sign that the soul has safely arrived at the presence of *Ituana* (*Itoki*).

The *sa̱u* of the Sumu is in general less noisy than the *sikro* of the Miskito. The guests eat and drink continually, but they neither sing nor dance. Melancholy music is furnished by reed flutes (*bara*), cedar drums (*pantak*, *panatak*), and short fifes (*una*).

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larger settlements of the country; they ignore the Indian languages, however, and their activities are practically limited to the Ladinos.

On the other hand, the Moravians (*Unitas Fratrum*), who came to the coast in 1849, have succeeded in evangelizing most of the Miskito and some of the Sumu as well. They use both English and Miskito in church and school. The first effort by Protestants to introduce Christianity among these Indians is the one made by English Puritans, who in 1630, under the Earl of Warwick, took possession of the island of Providencia, situated off the Atlantic shore of Nicaragua. They opened up commercial relations with the Miskito of Cabo Gracias a Dios and maintained themselves in the island until 1641, when they were ejected by a Spanish fleet. In those days a number of the Indians traveled to Providencia, where they became familiar with the Lord's Prayer, the Creed, and the Ten Commandments (Sloane, a: I, p. LXXVIII).

SUPERSTITIOUS BELIEFS: OMENS, CHARMS, AMULETS, TALISMANS, ETC.

BAD OMENS.—Anything occurring out of the ordinary is considered a bad omen (M.: *yulwin;* S.: *diluk*), and some calamity is believed to befall one or more of the persons present.

Should the hunter, for instance, miss the game an unusual number of times on a certain day, he considers this the sign or token that he will soon fall sick and perhaps even die.

If someone should quite involuntarily let the paddle drop in the water, this is accepted in the light of a token of something evil about to happen.

Should the dog act in a peculiar manner and run around barking all about the house, although investigations will show that there is nothing wrong anywhere, this is a bad omen and soon some one of the inmates will die.

The crowing of a hen is also taken for a bad augury. Ladinos and Creoles participate in this superstition, and they immediately catch the fowl in question and wring its neck.

BIRDS OF ILL OMEN.—There are a number of birds which cause disease and even death when being seen, either at any time or under certain circumstances only. They should particularly be avoided by the Indian when he is hunting or working in the bush on a Sunday, but this belief is undoubtedly traceable to Christian influence. The Indians refuse to eat the flesh or the eggs of certain melancholy birds, believing that by so doing they will go wailing through the bush like the lonely bird itself. They also refrain from killing certain birds believed to have a keeper or owner invisible to man, and who would revenge himself.

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Certain owls and the snake hawk (M.: *waka, wakema;* S.: *makowa*) are especially feared, and the mere sight of them is supposed to cause disease or death.

The goat sucker (*Caprimulgus* sp.), a very common bird, is also feared owing to its uncanny nocturnal habits, the swiftness and peculiarity of its flight, and its note, which breaks the silence of the night. In Costa Rica its bones, dried and ground to a fine powder, are used by the Indians as a charm against their enemies. The powdered bone is mixed with tobacco in a cigarette which when smoked causes certain death, according to the popular belief.

A large spotted nightbird (M.: *boa, ukwas;* S.: *ya*), which appears sometimes in the neighborhood of the settlements at daybreak, is likewise feared.

The note of a nightbird, resembling the Mexican cuckoo and known by the onomatopoeic names of *pikwa* (M.) and *tiku* (S.), is supposed to give a flat denial to any assertion made at that moment. When heard immediately after some one has made a remark, it means that the person in question has told a lie, or that he is unable to perform what he intended to do. If the Indians are, for instance, discussing some project, as a journey, festival, hunting expedition, and the like, the cry of this bird will cause them to put it off. When the hunter hears its voice he returns home immediately, knowing that luck will be against him on that day. At the mahogany camp on Rio Camanan (Rio Coco) a young Sumu from Rio Patuca was discussing with some of his countrymen the route to be followed on his journey back home, his period of contract having expired, when suddenly a loud *pikwa* was heard near by. The Indian immediately became alarmed and despondent, and it took some time to calm his fears.

SUPERSTITIONS REGARDING OTHER ANIMALS.—A small ugly species of croaking lizard, called "galley asp" by the Creoles (M.: *akak;* S.: *kakak*), is held to be very venomous. The Indians claim that after having bitten some one it will rush immediately to the nearest water; the person bitten must do the same, and whichever reaches the waterside first will survive (Bell, a: 265).

The sumbadora snake (M.: *matsikas*) is said to be very savage at certain times of the year, when its bite may become fatal. Others claim that, if molested, it will pursue a person, twist round his body, and lash him with its tail; it especially attacks a woman *enciente*.

The boa snake is said to contain a little venom in its fangs, which it discharges in the early morning only; at that time of the day its bite is therefore considered fatal.

A small speckled tortoise (M.: *swanhrik;* S.: *palan-kuwa*) is said to be very thoughtless, and to lose its way frequently, as it may be found occasionally on the hills, far away from the nearest stream.

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825 The Indians do not eat it, believing that by so doing they will become forgetful like the tortoise itself, and become lost in the bush or misplace things, and the like.

825 Strange animals are regarded as evil spirits and their appearance is a bad omen; the Indians do not dare to kill them. Heath, while 787 stopping with his Miskito crew from Kiplapihni at an empty house at Burimak (middle Rio Coco), came across a strange bat, which event he relates as follows: "We saw clinging under the palm roof a small snow-white bat. Some felt sure that it would suck our blood in the night; so it was killed, but turned out to be a perfectly harmless creature with very beautiful fur. But now, as no one present had seen such a white bat before, some declared that its coming was a bad omen; others that it was sent by an evil spirit, or was even more likely itself to be an evil spirit; that the man who killed it would soon die of a pernicious fever, etc. It took some time to calm the fears of the women especially." (Heath, b: 377.)

789 CHARMS, AMULETS, TALISMANS.—Some of the ornaments are un-751 doubtedly supposed to act as charms, amulets, or talismans, as they are worn chiefly by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tattoo, etc., seem to have had originally a religious and magical significance rather than a desire to embellish the appearance. Red and black paint is still regarded a prophylactic against disease.

789 Charms are used for managing the opposite sex, as a cure for barrenness by women, in order to have a male child, and for luck in hunting and fishing. Jaguar teeth are carried as talismans for courage, strength, and to stimulate virility and excite venery.

Charms on fruit trees have the object of increasing their yield and keeping birds, animals, and even man from plundering them. In order to render fruit trees more productive the Miskito drive a nail in the side of the stem facing the west. When they make staffs for turtle spears they also prefer utilizing the west side of the stem of the pejivalle palm, believing that part of the trunk to be more durable and resistant.[75]

Celts or stone axes, which are occasionally dug up in the fields, are regarded as "thunderbolts," and were worn in former days as amulets for protection against lightning. They were also supposed to render the bearer brave and enduring. They are considered very efficacious in healing certain diseases, and the sukya makes use of them in practicing his rites of sorcery. On account of these proper-

[75] The Creoles, in making tea from the medicinal bark of certain trees, likewise prefer using the bark on the side facing the sunset.

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ties the Indians will part with stone axes only for a comparatively large sum of money.

Similar superstitions about these stone celts are held by the other populations of this part of Central America. The local names "thunderbolt," "thunderstone" (Creoles), "piedra de raya" (Spanish), *alwani mahbra*, *imyula mahbra* (M.), *alwana suma* (S.), *dama up* (Rama) in themselves point to a belief in their celestial origin. They are supposed to come down from the sky with the lightning and they are held responsible for the damage done at such an occasion. They penetrate the soil to a depth of 7 feet and then slowly work their way upward, reaching the surface again in seven years. It is claimed that sometimes such a thunderbolt may be found in a tree which has been struck by lightning. The surface of these celts is always smooth; often they are highly polished. Their color is always supposed to be identical with that of the soil in which they have been discovered.[78]

DIVINING ROD.—The Sumu of Rio Prinsapolca are said to make use of some sort of a divining rod (M.: *smaya kâikaya;*[77] T., P.: *tiñ amañnin;* U.: *ya bohnaka*), consisting of a smooth rod of either cacao wood or wild cane; it is about 3 feet in length, and a cotton thread is tied around the center. The Sumu appear to use the *tapúa* for the same purpose as the Jicaque of Honduras; with its aid they claim to be able to obtain almost any information regarding the future, their luck in fishing, hunting, love-making, etc.

I have not been able to see any of these rods, nor did I obtain any definite details regarding the manner in which they are used. The following account is taken from Collinson (b: 152): "Another very common and favorite method of unraveling the unknown is an incantation by a sukya. He commences operations by cutting a small wand, peeling it, and tying a short string to its top. He then strokes it repeatedly, muttering in undertone words supposed to form an incantation; after this has been done for some time, one end of the stick is placed in the left elbow, and the right arm is stretched out to the string end. If it exactly reaches this when extended to its full

[78] Some of the Creoles and Ladinos place stone axes in their water tanks and earthen water jars, in order to keep the drinking water pure and clean and at the same time preserve themselves from certain maladies. These celts are also believed to protect the houses from lightning, and for that purpose are suspended from the roof. A "true thunderbolt," it is claimed, may be determined by tying a thread firmly around the middle of the celt, and then attempting to burn the thread. This may be done by holding a match to it, or suspending it over a lighted candle, or even throwing it in the fire. If the celt is genuine the thread will not burn. Of course such an experiment can be made successfully with any smooth stone to which a thread has been tied so firmly that there is no air intervening, thus retarding combustion of the thread until the stone itself is hot enough to burn it.

[77] Lit.: "to have a hunch."

1: Conzemius M-4, 5 (1921) 1932
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length the wand will reveal the truth; if not the string must be altered and the process repeated until it is in its right position. Questions relating to the present and future will then be answered by the sukya, correctly as he states, though I must confess that the queries I propounded were never replied to very successfully, but I was an unbeliever, and it is a notorious fact that spirits are put out of their calculations by the incredulous."

CONTROL OF RAIN AND WIND.—Rain and wind can, according to the Indians, be produced or stopped at will by human, animal, or spirit agency. Thus while paddling down Rio Plátano with a Miskito crew, I noticed clouds gathering windward and threatening rain. The captain of the boat, upon noticing them, motioned the rain with the right hand to pass on, with the following words: "Do not come here as we do not want to get wet now! We have no shirt nor trousers with us to change, and if you will wet us we will have to remain in the moist clothes the whole day long and suffer from the cold. Pass on to those indolent and good-for-nothing people on Rio Patuca; they are all at home now lying in their hammocks."

Bell (b: 157) relates a similar experience with the Miskito of Rio Prinsapolca: The Indians, hearing the rain coming by the noise in the distant bush, vainly tried to keep it off by blowing with their mouths and driving the breath away on either side of their faces. They also spoke to the rain, telling it of the uselessness of its coming to wet them, thus: "Pass on, pass on; we are all wet already. You need not come here; pass on to the head of the river. There is gunpowder and tinder lying uncovered on the rocks. A man is burning a plantation there; pass on quickly, lest another shower wet it before you."

Often when the Indians heard a shower coming they pushed their canoe quietly under the thick bush to hide until the rain had passed, and were much annoyed if any one talked or made any noise. The killing of a howling monkey was also believed to bring rain, as that animal belongs to the water spirit, who will be angry at such an act (Bell, b: 157).

While proceeding up Rio Coco from the port Cabo Gracias a Dios to the Miskito settlement of the same name, my two paddlers put up a small sail, and then kept on whistling in order to call the wind to help them in their work. When all their efforts were of no avail they became rather vexed and made some disobliging remarks about the "lazy wind" (*pasa sriñwankira*).

ECLIPSES.—An eclipse of the moon is said by the Sumu to be caused by the jaguar devouring that heavenly body; their name in itself points to this belief (*wdiko nawa kaswe, wdiko nawa kasya;* lit.: "the jaguar is eating the moon"). At a lunar eclipse, no matter at what time of the night it occurs, the Sumu get up immediately in order

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liquid to the people present, but none of them dares to inspect it, not being immune from its effects as are the poison doctors and the foreigners. During the last two decades the fear of buried poison has spread to the Tawira-Miskito and to the Sumu; these Indians believe that the Miskito from Rio Coco are especially dangerous on account of their habit of killing their enemies with the aid of buried poison. Certain charms, as, for instance, the bitter antidote bean (*Fevillea cordifolia*), are occasionally carried to ward off the effects of such witch poison.

DREAMS.—The Indian pays great attention to dreams (M.: *yapri sdûkkan;* T., P.: *amana;* U.: *amiñna*). When he dreams that he has killed plenty of game he is certain to have good luck in the chase on the following morning. If he dreams of an accident he refuses to leave the settlement during the next few days. When he dreams of strangers, he expects a visit in the near future. The sukya, while curing a sick person, invokes friendly spirits in order to obtain from them during the dream information regarding the nature of the illness.

HAUNTED TREES.—The silk-cotton tree (see Religion, etc.) and the various species of figs (*Ficus* sp.), especially the giant chilamate or higuero, are said to be haunted. The Indians and Creoles believe that these fig trees flower only during the night and hold the fig to be the true fruit. Any one daring to go under the tree about midnight will be able to see the blossom and after that will be favored with good luck in anything he may attempt. This belief is shared by the ignorant Ladinos, who claim that the fig trees flower only on Good Friday night and that a blanket spread under them at midnight will be covered with small blossoms on the following morning.

MAGIC AND SORCERY: SUKYA, OKULI, SPIRITIST, OBEAH OR VOODOOISM

SHAMANS IN GENERAL.—Among these credulous people a great influence is exercised by the shamans, of which there were formerly only two categories, the *sukya* and the *okuli*. Of the latter there should be only one at a time, but of the former there is one in almost every larger village. In recent years two other sorts of shamans, the *spiritist* and the *obeah man*, have appeared on the coast.

These shamans play a great rôle in the life of the Indians, for they act as medicine men, doctors (see Hygiene: Diseases and their cure), augurs, conjurers, magicians, wizards, diviners, rain makers, spell-binders, priests, preachers, teachers, guides, advisors, counsellors, depositaries of tribal traditions, and the like. Their opinions were formerly of the greatest weight in tribal assemblies. Still, there is nothing characteristic about them in the way of ornament or dress,

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ordinary mortals. Thanks to these supposed powers, he is feared and respected far and wide. Such a state of affairs is occasionally very injurious to the Indian community as a whole, but in general abuses on the part of the sukya are not common.

Besides curing the sick, the advice of the sukya is sought in many instances. He is consulted in order to find out the whereabouts of a lost or stolen object, and he furnishes remedies to cure ill luck, to influence the heart of a person of the opposite sex, to increase the valor and courage of a man, and the like. He will inform the hunter how to proceed in order to secure plenty of game, for he has generally a good knowledge of the instincts and habits of animals. If he is unsuccessful, he claims that his client has transgressed some prescription.

Some of these shamans have some knowledge of astronomy; others imitate the voice of other persons or of animals and birds, and some appear to be clever ventriloquists. They foretell the death of a sick person, and help artificially by means of poison on the specified day, in order to strengthen their reputation.

The sukya will also be asked to harm an enemy by casting an evil spell over him. The usual method followed by the Miskito sukya is to fire a gun in the direction of the person upon whom he wishes to inflict injury. His Sumu confrère will send disease or death by mistreating or stabbing an object, usually a doll or puppet (M.: *yapti;* S.: *ditalna*), made of white tunu bark, and supposed to represent the intended victim. Some of these sorcerers are also said to transform themselves into a snake or jaguar and then harm their enemy.

There are good and bad sukyas, who are sometimes at feud with each other. In his own village the sukya is generally said to be good, but in the neighboring settlement there is a bad one, whom he has to fight and send away the evil spirit which the latter despatches in order to cause disease and death. The bad sukya will, for instance, send an animal or bird with poison to the neighboring village, but his confrère from the latter settlement sees it coming and sends it back. The animal goes hither and thither, until finally the "stronger" of the two opponents wins.

INITIATION OF THE SUKYA.—The choosing of his career by the sukya is supposed not to be voluntary. A person whom destiny has picked out for this high office is said to come under the influence of some spirits, from whom he is unable to deliver himself. During the night he acts like an insane person; he gets up from bed and talks with invisible beings in a mysterious "spirit" language.

In this state he makes prophecies, and if these come true his friends will urge him to become a sukya. He then prepares himself for his career through fastings, vigils, and other means of achieving exhaustion and the novice will be reduced to a skeleton. During this

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746 Among some tribes, this ceremony is repeated at a later date. The *Sumo*
[34] are said to have practiced circumcision. The couvade is general.
[35] Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.
751 **Puberty.**—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.
[34] Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.
763 **Death.**—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.
764 The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to
[532] be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.
765 The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter.
[787] Shamans invoke the soul in order to discover who was responsible for
769 the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.
[34] According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

WARFARE

721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

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same way that manioc is planted. Some of the tribes recount a myth of a great flood. The *Jicaque* believe in two benevolent deities and a female god of evil. No offerings are made to the "good" deities, but attempts are made to placate the "evil" one, a female who is responsible for all misfortune and who causes death.

The *Sumo* and *Mosquito* and possibly the *Paya* believe that after death the soul makes its way eastward over a difficult route to a nether world of plenty and happiness. The description of the route traveled and the acts performed by the survivors of the deceased to aid the progress of his soul on this road differ from tribe to tribe. Under certain conditions the soul may remain about the house of the deceased and even occupy his former belongings, including domestic animals. For this reason these things must be destroyed.

The *Sumo*, *Mosquito*, and *Paya* believe that the world is populated with innumerable spirits. These haunt hills, caves, deep pools of water, and other places, and they are responsible for most misfortunes including sickness and death. A large part of the work of shamans is to placate these spirits, to drive them out of sick people, and otherwise to destroy them. Protection from the bad spirits is afforded by amulets and charms.

SHAMANISM

Most *Sumo* and *Mosquito* settlements have a shaman, who may take part in secular affairs but whose chief duty is to cure the sick. Shamans possess some spiritual power, but very little is known of the various rituals through which it is acquired. Sons and sometimes sons-in-law may succeed a shaman. Curing varies in detail according to the individual shaman and the spirits addressed. A shaman goes into a trance in which he contacts the spirits and, in one way or another, drives them out of the afflicted person. Curing rituals also include songs, dances, and the use of painted sticks, carved figures, and other paraphernalia. Some diseases are cured by the imposition of diets, the prohibition of sexual intercourse, and other restrictions. Complicated diseases or village-wide epidemics are isolated and receive special medical and ceremonial treatment. Infections, snake bites, and diseases such as malaria are cured by both shamans and laymen, the latter using infusions of herbs and a large number of native medicines. Steam baths followed by a cold plunge are also employed. Baths in hot springs and partial burial in hot sand are common practices, especially among the *Sumo*. When surgery is necessary a shaman employs knives made of obsidian, flint, bone, and such. Ashes, tobacco, wax, and resin are used as antiseptics.

A shaman may also prophesy the future or determine the route hunters should take in order to find game. By conjuring, a shaman may cause harm to come to people. A shaman may be retained by a person to eliminate an enemy.

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nawal[72]), which inhabit the hills, caves, deep water pools, etc. They are extremely malevolent and they are ever ready to injure the people, causing disease or death. They are especially dangerous after sundown, when the fear of them makes a coward of the most daring and courageous Indians.

The Indian has a natural reluctance to reveal his religious ideas, especially such as he suspects to seem ridiculous to a stranger. It is therefore very difficult to obtain reliable information from them pertaining to this subject. At the death of a person the material body undergoes dissolution and one or more spirits are set free and roam about doing mischief, until they are directed by the sukya to the Hereafter. Animals likewise have spirits, or they may be possessed by evil spirits.

Conspicuous hills are generally haunted by evil spirits, and the latter are said to have carved the petroglyphs found at certain large river falls. Peculiarly shaped rocks are supposed to have been formerly human beings, who have become petrified, generally as a punishment.[73] Not only may sentient beings be changed into rocks, but they may also originally have issued from them. A Sumu legend traces the origin of that tribe to the Kaunapa Hill on the left bank of Rio Patuca, to a place where petrified navels are said to exist.

Trees and plants appear to be animated by spirits (M.: *lilka;* T., P.: *wayani;* U.: *wayaka*), which affect their growth and the ripening of their fruits. In order to increase the yield of a fruit tree, or to render barren trees productive, several objects are placed on their branches after having been blown upon (M.: *yabakan*) by the sukya. Vegetal attraction charms, which are carried for good luck in the various walks of life, would seem to point toward an original belief in plants possessing associated spirits.

Indians will keep at a certain distance from spirits and do not look at them nor point to them, nor even talk of them, as they might materialize, for, "speak of the devil and he is sure to appear." They even refuse to look at certain places haunted by evil spirits, and if they have to pass at close distance they will turn away the face in an opposite direction.

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[72] This word has evidently a close philological connection with *Nauallí*, the name of a magical high priest of the Aztecs; he was celibate and was supposed to assume animal shape at will. From his name is derived the term "nagualism," a species of sorcery still existing among the ignorant Ladinos in certain regions of Central America. *Nawa* or *nawah* is also the Sumu name for "puma" or "jaguar." Cf. also *nawal* "sorcerer" and *nawal-ih* "to predict, to enchant," in the Quiché language of Guatemala.

[73] On the right bank of Rio Coco, opposite Yaluk Hill, there are some rocks which are believed to be the petrified remains of a great Sumu sukya, named Panamaka, who lived on the said hill.

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The Indians do not eat it, believing that by so doing they will become forgetful like the tortoise itself, and become lost in the bush or misplace things, and the like.

Strange animals are regarded as evil spirits and their appearance is a bad omen; the Indians do not dare to kill them. Heath, while stopping with his Miskito crew from Kiplapihni at an empty house at Burimak (middle Rio Coco), came across a strange bat, which event he relates as follows: "We saw clinging under the palm roof a small snow-white bat. Some felt sure that it would suck our blood in the night; so it was killed, but turned out to be a perfectly harmless creature with very beautiful fur. But now, as no one present had seen such a white bat before, some declared that its coming was a bad omen; others that it was sent by an evil spirit, or was even more likely itself to be an evil spirit; that the man who killed it would soon die of a pernicious fever, etc. It took some time to calm the fears of the women especially." (Heath, b: 377.)

CHARMS, AMULETS, TALISMANS.—Some of the ornaments are undoubtedly supposed to act as charms, amulets, or talismans, as they are worn chiefly by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tattoo, etc., seem to have had originally a religious and magical significance rather than a desire to embellish the appearance. Red and black paint is still regarded a prophylactic against disease.

Charms are used for managing the opposite sex, as a cure for barrenness by women, in order to have a male child, and for luck in hunting and fishing. Jaguar teeth are carried as talismans for courage, strength, and to stimulate virility and excite venery.

Charms on fruit trees have the object of increasing their yield and keeping birds, animals, and even man from plundering them. In order to render fruit trees more productive the Miskito drive a nail in the side of the stem facing the west. When they make staffs for turtle spears they also prefer utilizing the west side of the stem of the pejivalle palm, believing that part of the trunk to be more durable and resistant.[78]

Celts or stone axes, which are occasionally dug up in the fields, are regarded as "thunderbolts," and were worn in former days as amulets for protection against lightning. They were also supposed to render the bearer brave and enduring. They are considered very efficacious in healing certain diseases, and the sukya makes use of them in practicing his rites of sorcery. On account of these proper-

[78] The Creoles, in making tea from the medicinal bark of certain trees, likewise prefer using the bark on the side facing the sunset.

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ties the Indians will part with stone axes only for a comparatively large sum of money.

Similar superstitions about these stone celts are held by the other populations of this part of Central America. The local names "thunderbolt," "thunderstone" (Creoles), "piedra de raya" (Spanish), *alwani mahbra*, *imyula mahbra* (M.), *alwana suma* (S.), *dama up* (Rama) in themselves point to a belief in their celestial origin. They are supposed to come down from the sky with the lightning and they are held responsible for the damage done at such an occasion. They penetrate the soil to a depth of 7 feet and then slowly work their way upward, reaching the surface again in seven years. It is claimed that sometimes such a thunderbolt may be found in a tree which has been struck by lightning. The surface of these celts is always smooth; often they are highly polished. Their color is always supposed to be identical with that of the soil in which they have been discovered.[76]

DIVINING ROD.—The Sumu of Rio Prinsapolca are said to make use of some sort of a divining rod (M.: *smaya kâikaya*;[77] T., P.: *tiñ amañnis*; U.: *ya bohnaka*), consisting of a smooth rod of either cacao wood or wild cane; it is about 3 feet in length, and a cotton thread is tied around the center. The Sumu appear to use the *tapúa* for the same purpose as the Jicaque of Honduras; with its aid they claim to be able to obtain almost any information regarding the future, their luck in fishing, hunting, love-making, etc.

I have not been able to see any of these rods, nor did I obtain any definite details regarding the manner in which they are used. The following account is taken from Collinson (b: 152): "Another very common and favorite method of unraveling the unknown is an incantation by a sukya. He commences operations by cutting a small wand, peeling it, and tying a short string to its top. He then strokes it repeatedly, muttering in undertone words supposed to form an incantation; after this has been done for some time, one end of the stick is placed in the left elbow, and the right arm is stretched out to the string end.. If it exactly reaches this when extended to its full

[76] Some of the Creoles and Ladinos place stone axes in their water tanks and earthen water jars, in order to keep the drinking water pure and clean and at the same time preserve themselves from certain maladies. These celts are also believed to protect the houses from lightning, and for that purpose are suspended from the roof. A "true thunderbolt," it is claimed, may be determined by tying a thread firmly around the middle of the celt, and then attempting to burn the thread. This may be done by holding a match to it, or suspending it over a lighted candle, or even throwing it in the fire. If the celt is genuine the thread will not burn. Of course such an experiment can be made successfully with any smooth stone to which a thread has been tied so firmly that there is no air intervening, thus retarding combustion of the thread until the stone itself is hot enough to burn it.

[77] Lit.: "to have a branch."

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length the wand will reveal the truth; if not the string must be altered and the process repeated until it is in its right position. Questions relating to the present and future will then be answered by the sukya, correctly as he states, though I must confess that the queries I propounded were never replied to very successfully, but I was an unbeliever, and it is a notorious fact that spirits are put out of their calculations by the incredulous."

CONTROL OF RAIN AND WIND.—Rain and wind can, according to the Indians, be produced or stopped at will by human, animal, or spirit agency. Thus while paddling down Rio Plátano with a Miskito crew, I noticed clouds gathering windward and threatening rain. The captain of the boat, upon noticing them, motioned the rain with the right hand to pass on, with the following words: "Do not come here as we do not want to get wet now! We have no shirt nor trousers with us to change, and if you will wet us we will have to remain in the moist clothes the whole day long and suffer from the cold. Pass on to those indolent and good-for-nothing people on Rio Patuca; they are all at home now lying in their hammocks."

Bell (b: 157) relates a similar experience with the Miskito of Rio Prinsapolca: The Indians, hearing the rain coming by the noise in the distant bush, vainly tried to keep it off by blowing with their mouths and driving the breath away on either side of their faces. They also spoke to the rain, telling it of the uselessness of its coming to wet them, thus: "Pass on, pass on; we are all wet already. You need not come here; pass on to the head of the river. There is gunpowder and tinder lying uncovered on the rocks. A man is burning a plantation there; pass on quickly, lest another shower wet it before you."

Often when the Indians heard a shower coming they pushed their canoe quietly under the thick bush to hide until the rain had passed, and were much annoyed if any one talked or made any noise. The killing of a howling monkey was also believed to bring rain, as that animal belongs to the water spirit, who will be angry at such an act (Bell, b: 157).

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ECLIPSES.—An eclipse of the moon is said by the Sumu to be caused by the jaguar devouring that heavenly body; their name in itself points to this belief (*wóñko nawa kasne, wóñko nawa kasya;* lit.: "the jaguar is eating the moon"). At a lunar eclipse, no matter at what time of the night it occurs, the Sumu get up immediately in order

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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kaswe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[76]

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kati di-skura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu di-skura alkan* "the sun has caught his mother-in-law."[77]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers.

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sdiks*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless.

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontin" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast.

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects.

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[76] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Gothenburg, 1920, p. 20).

[77] Sun and moon are considered masculine in the Miskito language.

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SHAMANISM

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catch. To most Indians the okuli is the greatest man on earth; they do not dare say anything against him, for he knows everything that goes on, no matter how far away he is.

THE SPIRITIST.—A new movement, not unlike the nyalism among Jamaican Negroes, has appeared among the Christianized Miskito during the last 40 years. While engaged in fervent prayers, either in church or at home, certain people suddenly begin to act like mad; they shiver over the whole body, run and dance around, give out loud screams, and by other means seek to attract attention.

They claim that at such periods they have no control over their actions, and that the latter are due to the presence of the Holy Ghost in themselves. For this reason they are known among the Miskito as *pirit-uplika* "spirit men." While in this state of ecstasy they are supposed to be able to cure the sick by laying hands upon them. They also pretend having revelations from God during their dreams.

Although excluded from church membership by the Moravians, the spirit men or spirit women, for the female sex is not excluded from this office, frequent the churches. They pretend to be good Christians, and their influence is very great among the Christianized Miskito. The movement has, however, not had many followers among the Sumu. In certain districts the spiritists cause more trouble to the work of evangelization than to their heathen confrères, the sukyas. Although attributing the results of their cures directly and solely to the will of God, some of these spiritists make use of native herbs, of which they have a crude knowledge.

OBEAH OR VOODOOISM.—The belief in obeah (obia) was brought over from Africa by the slaves, and it still exists among the ignorant Creoles and the immigrated West Indian Negroes. The Blacks from British Honduras are especially noted as great obeah or voodoo men.

Feathers, bones, colored rags, thunderbolts (stone axes), and small bottles filled with insects and powdered earth, belong to the paraphernalia of these shamans, whose mode of working their spells does not differ essentially from that of the Indian sukya. Some of the obeah men from Jamaica or British Honduras have become sukya upon settling among the Indians of the Mosquito Coast.

The obeah men are much feared by the Creoles, Negroes, and Indians, as they are supposed to inflict bad luck, disease, and death upon an enemy. When some one is suffering from a lingering malady it is said that obeah is "on" him. His only recourse is to go to an obeah man, who will remove the evil for the payment of a sum of money. This sort of sorcery is, indeed, a very profitable business. Should the sick person die, however, the obeah man will claim that his instructions have not been carried out.

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could scarcely move, and he asked his brother for some water. The latter did as he was told, but the more Suko drank the thirstier he became, and he kept his brother continually on the run to fetch water. Finally Kuru became tired of this and helped his brother to get to the edge of the creek, so that he might drink as much as he wanted.

Arrived at the waterside, Suko lay down on the ground, and reaching with his head down in the water, he kept on drinking without stopping. Gradually his body assumed the shape of a gigantic boa constrictor (M.: *waula;* S. *wayil*), while the head retained its normal size and shape. Kuru became scared and he went home, but did not dare tell anything about what had happened. When the people inquired about his brother, he answered that he was still engaged in fishing and would come a little later.

But the neighbors noticed that something had happened and they made off all together to look for Suko. Arrived at the fishing ground, they found the boa constrictor on the branches of a very high ceiba or silk-cotton tree. But hardly had they perceived him when a big flood came which inundated the whole country. Every one was drowned with the exception of Suko and the latter's wife and children.

CHRISTIANIZATION.—Many women and children who have not been christened carry small crosses, medallions, and scapularies around their neck, which articles they have obtained from passing priests, or bought from Ladino traders. They consider them generally as charms to ward off danger, sickness, poison, and death. By many Indians who have not received any teachings from missionaries baptism is considered often only a sort of magic ceremony to get a new name, drive out the devil, or ward off danger, evil, and the like. Even in the interior, where many Indians pretend to be Catholics, the cult of the saints is often nothing less than a fetish worship. Pictures and statues of the saints take the place of house idols. When the Indians are on the point of committing an act which does not agree with the teachings of the church, the respective images or statuettes are covered up with a cloth, so that the saints are unable to observe them. When they ask the saint for a special favor they make a vow or solemn promise to him and pray during nine consecutive evenings. In case the saint proves unreliable he is sometimes punished by being beaten or beheaded or mutilated in some other way.

During the colonial period Spanish missionaries made several attempts to penetrate among the aborigines of the Mosquito Coast, but their efforts were unsuccessful. An account of the activities of these Franciscan monks is given by Conzemius (b: 25–31). Since the last years of the nineteenth century Spanish Capuchins from Barcelona have been established at Bluefields and in several of the

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787 larger settlements of the country; they ignore the Indian languages, however, and their activities are practically limited to the Ladinos.

On the other hand, the Moravians (*Unitas Fratrum*), who came to the coast in 1849, have succeeded in evangelizing most of the Miskito and some of the Sumu as well. They use both English and Miskito in church and school. The first effort by Protestants to introduce Christianity among these Indians is the one made by English Puritans, who in 1630, under the Earl of Warwick, took possession of the island of Providencia, situated off the Atlantic shore of Nicaragua. They opened up commercial relations with the Miskito of Cabo Gracias a Dios and maintained themselves in the island until 1641, when they were ejected by a Spanish fleet. In those days a number of the Indians traveled to Providencia, where they became familiar with the Lord's Prayer, the Creed, and the Ten Commandments (Sloane, a: I, p. LXXVIII).

SUPERSTITIOUS BELIEFS: OMENS, CHARMS, AMULETS, TALISMANS, ETC.

787 BAD OMENS.—Anything occurring out of the ordinary is considered a bad omen (M.: *yulswin;* S.: *diluk*), and some calamity is believed to befall one or more of the persons present.

Should the hunter, for instance, miss the game an unusual number of times on a certain day, he considers this the sign or token that he will soon fall sick and perhaps even die.

If someone should quite involuntarily let the paddle drop in the water, this is accepted in the light of a token of something evil about to happen.

Should the dog act in a peculiar manner and run around barking all about the house, although investigations will show that there is nothing wrong anywhere, this is a bad omen and soon some one of the inmates will die.

The crowing of a hen is also taken for a bad augury. Ladinos and Creoles participate in this superstition, and they immediately catch the fowl in question and wring its neck.

825 787 BIRDS OF ILL OMEN.—There are a number of birds which cause disease and even death when being seen, either at any time or under certain circumstances only. They should particularly be avoided by the Indian when he is hunting or working in the bush on a Sunday, but this belief is undoubtedly traceable to Christian influence. The Indians refuse to eat the flesh or the eggs of certain melancholy birds, believing that by so doing they will go wailing through the bush like the lonely bird itself. They also refrain from killing certain birds believed to have a keeper or owner invisible to man, and who would revenge himself.

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805 the year of 12 months has been adopted. The names of the latter are the following:

Month	Miskito	Twahka and Panamaka
January	*Aladi kati* "New Year's Day month"	*Aladi wâiniko.*[1]
	Mani raya kati "New year month"	
	Inupu kati "guácimo (bastard-cedar) month."[2]	*Inipu wâiniko.*
February	*Kuswa kati* "tortoise month"	*Kowa wâiniko.*
	Islu kati "garrobo (or ishwilly lizard) month."	
March	*Kakamuk kati* "iguana month"	*Kama wâiniko.*
April	*Wli wâintka kati* "male-turtle month"	*Wili almuk wâiniko.*
	Kut prâidi kati "Good Friday month"	
May	*Wli mâirin kati* "female-turtle month"	*Wili yal wâiniko.*
	Pisba kati, tisba kati "masica (or breadnut tree) month."	*Pisba wâiniko.*
June	*Li kati* "rain month"	*Wasma wâiniko.*
	Pupu wihta kati "Pleiades month"	
	Yahurus kati "wild-cane month"[3]	
July	*Pastara kati* "high-wind month"	*Dapa wâiniko* "wild-cane month."[3]
August	*Sikla kati* "sikla month"[4]	*Sikla wâiniko.*
September	*Wis kati* "wis month"[5]	*Tiwis wâiniko.*
October	*Sâut kati* "south-wind month"	*Saut wâiniko.*
	Prari kati "hurricane month"	*Prari wâiniko.*
November	*Yahbra kati* "north-wind month"	*Yahbra wâiniko.*
December	*Krismas kati* "Christmas month"	*Krismas wâiniko.*

[1] *Aladi* is corrupted from the English "holiday."
[2] This tree flowers in January.
[3] The wild cane flowers in June or July.
[4] A migratory bird which arrives in August.
[5] A migratory bird which arrives in September; it is a species of flycatcher (*Tyrannus intrepidus*).

The behavior of the elements, the opening of certain flowers, the maturing of certain fruits, the song of certain birds, and the spawning time of certain animals, each in its season, are thus the almanac of the Indians.

802 NUMERATION.—The numeral system is vigesimal, but in Honduras both Miskito and Sumu count by tens also (vide Conzemius, d: 81–82). High numbers are now generally expressed in English or in Spanish but in former days this was done by the word "many, much" or by a handful of sand or hair.

2: Kirchhoff E-4 (no date) 1948
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MYTHOLOGY

The literature, reported mainly from the *Mosquito* and *Sumo*, includes the many songs. An extensive folklore includes stories of the chase, of fishing, and of war. Quasi-historical tales speak of mysterious tribes who preceded the present inhabitants in the region. A migration legend says that the former home of the *Mosquito* and *Sumo* was on the Isthmus of Rivas. The *Sumo* version of a creation legend recounts the common origin of the *Mosquito* and *Sumo*.

LORE AND LEARNING

Rules of etiquette are elaborate even in everyday life. Time may be measured by the number of knots on a string or by pebbles placed in a gourd. The year was formerly divided into 13 months, the last of which was occasionally dropped in order to keep the months in adjustment with the seasons. The *Mosquito* and *Sumo* employ a vigesimal numerical system.

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the Indian is working as a day laborer he will keep track of his time by tying a knot in a string every evening, and finally compares the total of the knots with the amount of days credited to him by his employer. These small cords also take the place of cards of invitation for a great festival. One of them is carried by the messenger to the headman of each one of the invited villages. Each night one of the knots is severed, the last one representing the day of the meeting.

Instead of knotted strings there are also other systems of *pyu*, as, for instance, tablets or pieces of wood on which notches have been cut with a knife, or wherein small holes have been drilled for the reception of thin sticks. The women also make use of calabashes in which they place or from which they withdraw a small pebble every day. Each one of these notches, sticks, or stones signifies a day.

The presence of these simplified *quipu* among the Miskito and Sumu has already been observed by Roberts (270) and by Sapper (c.: 265). Similar systems may be found among the Talamanca tribes of Costa Rica and in many parts of South America and Oceania. Very complicated systems are known only from the ancient Peruvians; in their elaborate *quipu* the knots varied in value according to their coordinate placing. They were used for calendary calculations and also for statistics.

Days.—Great distances from one place to another are expressed by the number of "sleeps" or nights that one will have to sleep on the journey.

The approximate time of the day is not observed from the length of the shadow, but directly from the position of the sun. The Indians will point to the heavens and indicate the approximate position of that celestial body at the time at which a certain action took place.

Year.—The Indians calculate the year according to the return of the dry season, or summer; both the words "year" and "dry season" are expressed by the same word (M.: *mani;* T., P.: *kure, kuri;* U.: *mamaka*). The approach of the rainy season, or winter (M.: *li mani, li tâim;* S.: *wasma*), or the dry season, is known from the behavior of the animal and vegetable world. Very few Indians are able to give their approximate age. The great eruption of the Coseguina in 1835 formerly afforded a convenient reckoning period to start from.

Months.—The year was formerly subdivided into 13 months or "moons" (M.: *kati;* S.: *wakka*) of 29½ days each, corresponding to the average duration of a lunar revolution. As it was known, however, that the solar year corresponds to considerably less than 13 lunar revolutions, the thirteenth month was occasionally dropped in order to keep the moon in adjustment with the seasons. Nowadays

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whistling and blowing over it for about 5 or 10 minutes. Should he suffer a relapse and undergo another treatment the sukya will demand another fee.

RELIGION: SUPREME BEING, TRIBAL HEROES, SPIRITS, CREATION OF MAN, DELUGE, CHRISTIANIZATION

SUPREME BEING.—The religious system of these tribes has been fast disintegrating for the last generation. Nowadays both tribes believe in the existence of a Supreme Deity, which the Miskito call *Wan-Aisa*, "Our Father," and the Sumu *Ma-Papak* or *Ma-Papañki*, "Our Father" or "Sun-Father." Both tribes also make use of the name *Dawan*, "Master" or "Lord." This conception has probably been borrowed from Christianity; still Exquemelin (Engl. ed.: 251) states that in his days (1671) the Miskito believed in one God. This Deity, which dwells in heaven, is sometimes confused with the various tribal heroes. According to these Indians, God has created the world and the inhabitants, but He does not appear to worry a great deal about the individual being, nor is He able to ward off the various dangers which continually menace mankind; consequently He is not honored with offerings, prayers, worship, or sacrifice. Furthermore, He lives so far away from earth that it is impossible to enter into relations with Him, and He can not be approached by man.

MINOR GODS AND TRIBAL HEROES.—Both the Miskito and the Sumu believe in the existence of a number of supernatural beings, living formerly on earth like man. These are the sun (M.: *yu, lapta;* S.: *ma*), thunder (M.: *alwani;* S.: *alwana*), moon (M.: *kati;* S.: *wiko*), rainbow (M.: *kumadora;* S.: *wayauli, wayuli*), stars and planets (M.: *slilma;* T., P.: *yala;* U.: *ma-baku* "small sun"), the Pleiades (M.: *pupu-wihta;* S.: *kalpas*). According to a Sumu myth a bright planet, called by the Miskito *kati-maya*, "the moon's wife," which is seen just above the new moon, was originally a girl, who was raised by her finger tips by *Udo*, the moon god (Heath, c: 77). These various heavenly bodies are supposed by the Sumu to travel in canoes, a belief which is also held by the Cuna of Panama.[86]

Some of these supernatural beings are in charge of the elements and are responsible for the great calamities which appear occasionally. The god of the wind and of the air, called by the Miskito *Prahaku* or *Aubiya*,[87] sends the hurricanes and the great inundations which destroy the plantations and kill the livestock. His representative is

[86] Erland Nordenskiöld, Les Rapports entre l'Art, la Religion, et la Magie chez les Cuna et les Choco. Journal de la Société des Americanistes de Paris, tome XII, Paris, 1929, p. 150.

[87] Cf. "obi" or "obeah," a species of sorcery practiced among West Indian Negroes.

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the rainbow, which the Panamaka Sumu sometimes call *walasa aniwa*, "the devil is vexed." At its appearance the Indians hide their children in the huts so that they may not see it nor point at it; by the latter act the outstretched arm or hand is supposed to become crippled and covered with terrible sores.

Thunder (M.: *alwani;* S.: *alwana*) is sometimes confounded with God among the heathen Miskito and Sumu. According to some, he created the world and governs it by appointing the seasons; others say that he lived formerly on earth and was the first man. When he thunders, it is to warn man that a flood is coming. From an Ulwa Indian, originally from the headwaters of Rio Grande, I obtained the following story, which I propose naming—

The Origin of the Kiawa Rocks

God (*Ma-Papaŭki*) sent Thunder (*Alwana*) as his representative to the earth to instruct the people in agriculture and in other arts and crafts. One day while Alwana was absent from home an evil spirit, named Kiawa, came and carried off his wife.

A parrot (*warâwa*) informed Thunder of this fact while the latter was planting pine trees on a big rock at a place called to this day *Alwana kuma-ka rumpaŭ* (in Miskito, *Alwani ŭi-eal-ka lulkan*). This locality is on Rio Quiguasca, the upper course of Rio Grande; pine-covered rocks and low hills extend there to the very edge of the river.

Upon hearing what had happened, Thunder left his work in order to wrest his wife from Kiawa. He found the latter at his home on Rio Iya, a tributary of Rio Tuma. Kiawa was drunk at the time, but he was a powerful giant, and Thunder was unable to master him at first.

When the fight began Kiawa turned into a boa constrictor (*wyail*) and swallowed his own wife, in order to prevent her from falling into the hands of Thunder. The two enemies then vied with each other in growing tall, in order to reach the clouds. Each in turn outgrew the other, until finally Thunder's head overtopped the clouds, which enabled him to press his enemy to the ground. With his long machete (*masel*) he then cut Kiawa in pieces, thereby restoring to life all the people who had been swallowed by the giant. The various parts of the latter turned into rocks which are visible on the upper Rio Iya, and are still known by the name Kiawa. The Indians claim that sometimes these rocks bleed, and that certain parts of the giant, as his head and navel, may still be distinctly seen.[70]

Spirits.—More powerful than God or the various tribal heroes are the numerous evil spirits (M.: *ulasa, lasa;*[71] T., P.: *walasa;* U.:

[70] Heath (b: 419) gives a slightly different version of this story.

[71] Dampier (I, 9) already states that the devil is called *Wallassaw* by the Miskito.

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length the wand will reveal the truth; if not the string must be altered and the process repeated until it is in its right position. Questions relating to the present and future will then be answered by the sukya, correctly as he states, though I must confess that the queries I propounded were never replied to very successfully, but I was an unbeliever, and it is a notorious fact that spirits are put out of their calculations by the incredulous."

CONTROL OF RAIN AND WIND.—Rain and wind can, according to the Indians, be produced or stopped at will by human, animal, or spirit agency. Thus while paddling down Rio Plátano with a Miskito crew, I noticed clouds gathering windward and threatening rain. The captain of the boat, upon noticing them, motioned the rain with the right hand to pass on, with the following words: "Do not come here as we do not want to get wet now! We have no shirt nor trousers with us to change, and if you will wet us we will have to remain in the moist clothes the whole day long and suffer from the cold. Pass on to those indolent and good-for-nothing people on Rio Patuca; they are all at home now lying in their hammocks."

Bell (b: 157) relates a similar experience with the Miskito of Rio Prinsapolca: The Indians, hearing the rain coming by the noise in the distant bush, vainly tried to keep it off by blowing with their mouths and driving the breath away on either side of their faces. They also spoke to the rain, telling it of the uselessness of its coming to wet them, thus: "Pass on, pass on; we are all wet already. You need not come here; pass on to the head of the river. There is gunpowder and tinder lying uncovered on the rocks. A man is burning a plantation there; pass on quickly, lest another shower wet it before you."

Often when the Indians heard a shower coming they pushed their canoe quietly under the thick bush to hide until the rain had passed, and were much annoyed if any one talked or made any noise. The killing of a howling monkey was also believed to bring rain, as that animal belongs to the water spirit, who will be angry at such an act (Bell, b: 157).

While proceeding up Rio Coco from the port Cabo Gracias a Dios to the Miskito settlement of the same name, my two paddlers put up a small sail, and then kept on whistling in order to call the wind to help them in their work. When all their efforts were of no avail they became rather vexed and made some disobliging remarks about the "lazy wind" (*pasa sriñwankira*).

ECLIPSES.—An eclipse of the moon is said by the Sumu to be caused by the jaguar devouring that heavenly body; their name in itself points to this belief (*wdiko nawa kasice, wdiko nawa kasya;* lit.: "the jaguar is eating the moon"). At a lunar eclipse, no matter at what time of the night it occurs, the Sumu get up immediately in order

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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kaswe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78] 821

The Miskito, however, do not share in this superstition; they call the lunar eclipse *keti di-skura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu di-skura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers. 789 [751]

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sôika*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless. [824]

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontin" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast. 231

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects. 278

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1930, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

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is an elaboration of aboriginal customs, encouraged by the English. Early records indicate that the *Sumo*, *Paya*, and *Jicaque* developed similar but perhaps less complicated organizations in order to resist the Spanish Conquest. Probably they too had waged war previous to the 16th century, but available data do not permit identification of aboriginal customs.

Among the *Mosquito* and *Sumo* all men were potential warriors. They were arranged according to military ranks, which were distinguished by feather insignia. The warriors, particularly of the *Sumo*, were subject to severe tests including dietary restrictions, and they celebrated various ceremonies. Women were not permitted to attend these ceremonies, and the warriors were not supposed to have any relations with women. Before a battle shamans were consulted. The warriors, painted black, usually attacked the enemy at night. The *Mosquito* took prisoners to be sold as slaves to the Whites. The *Sumo* killed as many of the enemy as possible. They mutilated the corpses and wore the teeth and fingernails as trophies. Some of the *Sumo* reputedly ate the roasted flesh of their enemies in order to inflict further insult upon them and to make sure that they were completely destroyed.

ESTHETIC AND RECREATIONAL ACTIVITIES

Dances and music.—All ceremonies are the time for much intoxication, dancing, and singing. On frequent occasions the *Mosquito* sing in groups or singly. There are many kinds of dances, some of them specially for women and others for particular ceremonies. There are two types of drums: a goblet-shaped drum used in funeral and memorial ceremonies and a drum of European origin which is used in some of the ceremonies and, perhaps, as a signal drum. Conch-shell trumpets and reed or bone flutes with one to four stops are blown. *Sumo* and *Mosquito* shamans use flutes 6 feet (2 m.) long. The musical bow, with or without a gourd sounding box, is played by women. Gourd rattles are also used.

RELIGION

The *Sumo*, *Mosquito*, and *Paya* believe in a deity, called "Our Father," who lives in the sky. He is little interested in mankind, is too far removed to be approached by humans, and has little influence upon human affairs. The sun, moon, and stars, especially the Pleiades, are considered to be supernatural beings. They figure in the mythology and are of some significance in the religious philosophy. Solar and lunar eclipses, thunder, wind, the rainbow, and other celestial phenomena are explained by myths. The last three are the agents of the major deities.

A *Sumo* creation myth recounts the activities of two brothers who made the animals out of maize cobs. People are believed to have been made from rays of the sun. The *Paya* believe that their god sowed men in the

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nawal[72]), which inhabit the hills, caves, deep water pools, etc. They are extremely malevolent and they are ever ready to injure the people, causing disease or death. They are especially dangerous after sundown, when the fear of them makes a coward of the most daring and courageous Indians.

The Indian has a natural reluctance to reveal his religious ideas, especially such as he suspects to seem ridiculous to a stranger. It is therefore very difficult to obtain reliable information from them pertaining to this subject. At the death of a person the material body undergoes dissolution and one or more spirits are set free and roam about doing mischief, until they are directed by the sukya to the Hereafter. Animals likewise have spirits, or they may be possessed by evil spirits.

Conspicuous hills are generally haunted by evil spirits, and the latter are said to have carved the petroglyphs found at certain large river falls. Peculiarly shaped rocks are supposed to have been formerly human beings, who have become petrified, generally as a punishment.[73] Not only may sentient beings be changed into rocks, but they may also originally have issued from them. A Sumu legend traces the origin of that tribe to the Kaunapa Hill on the left bank of Rio Patuca, to a place where petrified navels are said to exist.

Trees and plants appear to be animated by spirits (M.: *lilka;* T., P.: *wayasi;* U.: *wayaka*), which affect their growth and the ripening of their fruits. In order to increase the yield of a fruit tree, or to render barren trees productive, several objects are placed on their branches after having been blown upon (M.: *yabakan*) by the sukya. Vegetal attraction charms, which are carried for good luck in the various walks of life, would seem to point toward an original belief in plants possessing associated spirits.

Indians will keep at a certain distance from spirits and do not look at them nor point to them, nor even talk of them, as they might materialize, for, "speak of the devil and he is sure to appear." They even refuse to look at certain places haunted by evil spirits, and if they have to pass at close distance they will turn away the face in an opposite direction.

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[72] This word has evidently a close philological connection with *Nauallí*, the name of a magical high priest of the Aztecs; he was celibate and was supposed to assume animal shape at will. From his name is derived the term "nagualism," a species of sorcery still existing among the ignorant Ladinos in certain regions of Central America. *Nowa* or *nowak* is also the Sumu name for "puma" or "jaguar." Cf. also *naual* "sorcerer" and *naual-da* "to predict, to enchant," in the Quiché language of Guatemala.

[73] On the right bank of Rio Coco, opposite Yaluk Hill, there are some rocks which are believed to be the petrified remains of a great Sumu sukya, named Panamaka, who lived on the said hill.

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291 PRUDERY.—The sentiment of prudery is natural with these people. Few of them will submit to medical examination and on that account there are few Indians working at the gold mines of Pispis, where every applicant for work is obliged to pass such an examination.

294 DRESSMAKING.—All the various garments were made formerly from tree bark or cotton. Raveneau de Lussan (439) states, however, that the Miskito made also clothing and blankets from a grayish [824] stuff which they obtained from the bastard palm (cabbage palm?). The clothes (M.: *kwala;* S.: *asna*) from imported cotton goods are [439] generally made by the men. Hand sewing machines may be met with in many huts. Needles (M.: *silak;* T., P.: *silip;* U.: *akusa*, from the Spanish "aguja") are bought in the local shops. The washing 296 of the clothes is, however, the work of the women, who beat them at the river banks with wooden clubs (*tamtam*); the leaves and the fruits [824] of a small tree (*Sapindus saponaria* L.; M. & S.: *sniwawa*) are used as soap.

BODILY ORNAMENTATION AND DECORATION

302 BODY PAINTING.—Black and red paint is still applied as an ornament, but more frequently the object is to protect the skin from the sting of certain insects, from the rays of the tropical sun, and even the cold. Perhaps originally this was also done in order to scare the enemy at a battle, for the body was painted in a very hideous manner when an armed expedition was being organized. The paint replaces to some extent the Indian's clothing. The black color is made use of by the men and the red by the women, just as was already the custom among the Miskito during the latter half of the seventeenth century (Exquemelin, Engl. ed.: 252).

386 The reddish pigment, which may vary from yellow to brown, is obtained from the seeds of a shrub or small tree, called annatto 824 (arnotto) and faroah in the British colonies of tropical America, and "achote" or "achiote" by the Spaniards; the Dutch in Surinam call it "orlean," while the French have given it the name "rocou," from *ruku* or *uruku*, used by certain Indian tribes of Brazil and the Guianas. Its botanical name is *Bixa orellana* L.; the word *Bixa* is derived from the ancient language of Haiti.

The seeds are gathered as soon as the capsules split open, and put in boiling water to remove the testa, or waxy substance, surrounding them. This red waxy coloring matter is then passed through a sieve and made to coagulate with the aid of the leaves of the *tiswat* tree or the seeds from the "ojo de buey" (*Mucuna* sp.; M.: *kwakus;* S.: *wabala*). It is kept in small calabashes or bottles, which may be seen depending from the rafters of the Indian hut. Before use the 302 pigment is tempered with native vegetable oils. It is applied by

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the women with the aid of small wooden sticks (M.: *aulala-dusa;* S.: *awal-panan*) across nose, cheeks, chin, and forehead, in lines, dots, and dashes; sometimes geometrical designs are made. This manner of applying the pigment is by no means hideous; the legs are occasionally painted to match the color of the dress.

The black paint is used by the men. The Sumu obtain it chiefly from the melted gum of certain trees, as rubber (*Castilla* sp.), cortés, or *auka* (*Tecoma* sp.), or "tunu," whereas the Miskito use pinewood soot (M.: *slami;* S.: *dam*). Over the latter the Miskito apply a "varnish" of turpentine (M.: *auas-maka;* S.: *auas-ya*), which habit was practiced already toward the end of the seventeenth century (M. W.: 308). The men generally smear the whole of the exposed body parts and never make use of the pretty designs obtained by the women with annatto dye.[25]

Sometimes clays are also used as pigments. In former days it was the work of the woman to paint and anoint her husband every morning previous to his departure for the chase. Now everyone does his own painting and decorating; small looking-glasses for that purpose are in every household. The latter are known by their English name among the Miskito, whereas the Sumu call them *waya-tal* "to see the likeness."

TATTOO.—The embellishment of the countenance with tattoo (M.: *rami;* S.: *tik-pana, rami*) is still common among both tribes. The incisions into the flesh were formerly made with the thorns of certain bromeliaceous plants, flint splinters, agouti claws, or fish teeth; pinewood soot was then rubbed into the wound. Nowadays the flesh is punctured with steel needles and gunpowder is applied in the incisions. The stains are as enduring as a human life. Face, arms, and breast are the body parts which are most frequently tattooed. The designs generally represent geometrical figures and resemble those engraved on calabashes and on river bowlders. At the time of Columbus (1502) a certain tribe living on the coast of Honduras, to the west of Cabo Gracias a Dios, had on arms and bodies "figures wrought with fire," representing jaguars, pumas, and castles. Pim and Seemann also state that tattooing by cautery was practiced by the Sumu of Rio Escondido.

NECKLACES.—Necklaces (M.: *nana-wilkaya;* T., P.: *ditmak-sitnin;* U.: *dakat-sitnaka*) of shell beads, quartz, greenstone, fish, and turtle bones, small vertebræ, snails, animal teeth, and seeds from certain plants were formerly in use. It is unknown, however, how these articles were formerly pierced without the aid of European imple-

[25] According to Bell (b: 186) the male Sumu from the upper Rio Prinsapoles painted their faces black and red in stripes and diamonds.

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ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilywa;* T., P.: *ala;* U.: *tasaŭka*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

NOSE AND LIP ORNAMENTS.—The nasal septum was formerly perforated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

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EAR ORNAMENTS.—Formerly the ear lobes of both sexes were pierced for the reception of ear plugs (see under Deformation of body) and pendants were worn at festivals. Nowadays silver crescentic earrings (M.: *kyama-lula, kyama-dusa, kul-dusa, baprih;* S.: *tapana*) and finger rings (M.: *mat-diñka, mihta-diñka;* S.: *tinana*) are very common. These articles are either bought from foreign traders or from traveling Ladino goldsmiths.

HAIR.—The men cut their hair short, but occasionally the elder Miskito leave a lock of hair just back of the crown. About the middle of the nineteenth century the Sumu men wore their hair long and tied it in a queue (Bell, b: 158; Collinson, b: 149–150), but now they have it cut fairly short in a straight line just above the eyebrows and as far back as the temples. The women of both tribes cut their hair off just above the eyelashes in order to prevent it from hanging over the face, but on the sides and back it is allowed to hang down freely. Upon the death of a relative they cut it off short and lay it in the grave with the deceased, a practice which formerly was also current among the men at the death of their wives.

At the settlement of Cariay, which probably existed in Costa Rica and not on the Mosquito Coast, as many believe, the women wore their hair cut short in 1502. The men, on the other hand, had it long; the fringe was cut moderately short, while the remainder of the hair was allowed to grow long and was bound up with fillets round the head in braids and rolls.

Both sexes devote much attention to their hair and they apoint it frequently in order to render it softer and easier to handle. Their favorite hair oil, known by the Miskito name *batana*, is obtained from the seeds of the oil palm (*Elaeis melanococca*). The Sumu also extract the oil from the seeds of various other trees, as the saba (*Guarea caoba* or *Carapa guianensis*), the "eboe" (*Coumarouna oleifera*), the "yari" and the small huiscoyol palm (*Bactris horrida* Oerst.); they also buy *batana* from their neighbors. Nowadays these hair oils are mixed with foreign hair tonics, perfumes, and vaselines, but in former days the Indians added the aromatic rootstock or fruits of certain indigenous plants. Flowers and ribbons are also tied or stuck in the hair by the females.

A crude native comb was formerly made by tying together a number of small sticks which tapered to a point at each end. Now only foreign-made combs are seen. Among the Miskito the latter are known by the English word *kum*, whereas the Sumu have native names (T.: *bas-kus;* P., U.: *bas-kahna*). Exquemelin (Fr. ed.: II, 268–269) states that the Miskito wife used to comb her husband's hair every morning before the latter went out hunting and fishing.

DEPILATION.—Although the Indians take much pride in an abundant growth of hair on the head, they would formerly not allow any

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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puhlak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *krikri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets
513 and as bed sheets (M.: *nina-pala, munta-pala;* T., P.: *dañ-rina;* U.: *dañ-paknak*); in Honduras the Miskito also use mats (*tnasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilar*, corrupted from the English; S.: *tunana*) are stuffed with cotton
● [824] or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses.
[439] The mosquito nets, called *pabulo* by both tribes, are made of opaque cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wah*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

CRADLES.—In former days cradles (M.: *kuhsañ;* T., P.: *pala;* U.:
854 *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

352 STOOLS.—Low wooden stools (M.: *sulati;* T., P.: *tini;* U.: *panba*) with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

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DISHES.—Calabashes (M.: *kahmi;* S.: *sutak*) take the place of plates, cups and glasses in the Indian houses; they are made from the fruit of the calabash tree, which is cut in two equal halves, and the soft watery pulp with the seeds removed. The thin, hard, woody shell is not fragile and lasts a long time. 415

By piercing such a calabash with small holes a strainer or collander (M.: *lili;* T., P.: *lilihna;* U.: *dilana*) is obtained; this is the "chachi" of the Creoles.

Large cups without handles, and basins are bought in the local shops; they are known by the name *mak*.

Square, round, or oval-shaped wooden bowls are made by the Indians of mahogany or other woods; they are known by their English names. These bowls are thick and clumsy and shaped like shallow basins; occasionally they are provided with very short, stout legs.

VARIOUS KITCHEN UTENSILS.—Flat withe baskets (M.: *usnuh, uslun;* S.: *uslun, wah-tuina, sidan*), hanging under the roof in the smoke of the fire contain large wooden spoons (M.: *kustara*, from the Spanish "cuchara"; S.: *pan-yamna*), called "pat sticks" by the Creoles, small single-headed wooden pestles or wabul sticks (M.: *tuskaya;* T., P.: *pan-tirina;* U.: *pan-ruknaka*), cacao stirring sticks or "swizzle sticks" (M.: *purbaya;* S.: *pan-korona, pan-poronaka*). These various utensils are made from Spanish cedar, mahogany, sapodilla, or rosewood.

Iron graters are seen occasionally. The Sumu have a native name (*pan-alna*) for this implement, while the Miskito call it by its English name.

The rough leaves of a small tree (*Curatella americana* L.) and of a vine (*Davilla kunthii* St. Hil.) are employed instead of sandpaper for polishing purposes. Both these plants belong to the Dilleniaceae and are called "raspa-guacal," "hoja-chigüe" or "chumico" by the Ladinos; among the Miskito, Sumu, and Creoles they are known by the name *yahal*. 824 356

TOOLS

Before the discovery of America these Indians had few utensils and implements of stone; such articles were chiefly of wood, clay, shell, bone, etc. It would be nearer the truth to say that the Miskito and Sumu were living in the wood age instead of the stone age. Stone objects are, of course, the ones which have been preserved mostly. Fish teeth, snail and tortoise shells, quarts, flint, pebbles, and the like were used as scraping implements. Knives of bamboo are still used to sever the navel string of newborn babies. 412

MACHETE.—The machete (M., T., P.: *ispara*, from the Spanish "espada"; U.: *masat*), a heavy cutlasslike knife of about 2 feet in length, is the vade mecum of these Indians. It is their faithful

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that in former days the Miskito made rude canoes of plaited withes and made them waterproof by smearing a thin layer of clay over them. The Ladinos have corrupted the name into "pipante." The Miskito of the upper Rio Coco, who know no other boat but the pitpan, apply the name *dori* or *duri* nowadays to a keeled or unkeeled canoe, but among their kindred living near the sea this word is restricted to the former type. In all Sumu dialects both types are called *kuriñ*.

Bateau.—A large form of pitpan, known by the French name "bateau," is generally used to transport cargo on the rivers of the Mosquito Coast. It is made by enlarging an ordinary pitpan. The latter is cut lengthwise in two halves of equal size; boards are then inserted, and the two parts are joined again. The sides are also raised. Such bateaux are generally manned by six paddlers and take about 5,000 pounds of freight. On some of the larger rivers there are operating some bateaux measuring up to 60 feet in length, 4 to 6 feet in width, and taking up to 100 Spanish quintals (say, 4,600 kg., or 10,145 English pounds) of merchandise. These are manned by from 10 to 12 Indians. A small cabin or "carroza" for the passengers is made immediately in front of the captain's seat, who steers the boat from the stern with the aid of a gigantic paddle. Such a cabin may be made of canvas cloth or merely of bamboo and large leaves; it affords protection from rain and sunshine.

Making of a dugout.—The manner of cutting trees and hollowing them out in former days was evidently that practiced in other parts of the New World before the arrival of the Spaniards. A ring was made with the stone ax through the bark and base of the tree, thus causing it to dry. Then fire was applied, and the wood was cut away as it charred. This process was repeated until finally the tree was felled. The hollowing out of the stem was also effected by alternately applying fire and the stone ax. Water was always kept at hand in order to quench the fire so as not to waste more wood than was necessary.

The width of a dugout is enlarged after it has been filled with water during a number of days; it may then easily be stretched and widened by inserting sticks. In former days rough dugout canoes used to be furnished by some of the Sumu tribes as a sort of tribute to the King of the Miskito.

Trees used in canoe making.—Following is a list of the various trees which are made into canoes by the Indians under consideration:

Mahogany (M. and S.: *yulu*; *Swietenia macrophylla* King) is the tree most commonly used, as it is very abundant on the Mosquito Coast; canoes from this wood are very durable, but rather heavy, and they are often attacked by boring worms.

Cedar (M.: *yalam*, *wiñkur*; S.: *suhun*, *wiñkur*; *Cedrela* sp.). Canoes hollowed out from this tree are very light and comparatively du-

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rable; the wood splits easily, but it has the advantage of not being subject to the attack of worms.

The guanacaste tree (M. and S.: *tuburus; Enterolobium cyclocarpum* Griseb.) is the one preferred by the Black Carib for the making of canoes; they allow the tree to "season" on the ground for a few months before starting to hollow it out. The wood is as light as cedar.

From the silk cotton tree (M.: *sisin;* S.: *panya, paniki; Ceiba pentandra* Gaertn.) very large dugouts may be made, but its light, whitish wood is not durable. Owing to certain superstitions regarding this tree, it is rarely used in boat making. (See Religion, etc.)

Saba (M.: *swa;* S.: *saba; Carapa guianensis* Aubl. or *Guarea caoba* C. DC.). The wood from this tree can scarcely be distinguished from mahogany in color and general appearance, but it is less durable.

Santa Maria (M. and S.: *krasa; Calophyllum brasiliense* var.) is seldom used, and it is suitable only for small canoes, as the tree does not attain such a great size as the aforementioned varieties. The wood is very durable, but it is rather heavy.

Emery (*Vochysia hondurensis* Sprague) is occasionally made into dugouts in the southern section of the Mosquito Coast. The wood resembles that of the silk cotton, but it is more lasting. It has, however, the disadvantage of soon becoming water-logged; besides, it rots immediately where a nail has been driven in.

The banak or cebo tree (M. and S.: *banak; Virola merendonis* ?) is a large tree which is also occasionally made into canoes.

CANOE POLES.—Canoes are propelled by long poles or by paddles. The poles (M.: *kahra, kahara;* T.: *kaha pan;* P.: *kaha pana, kuriß pasa;* U.: *pan saß*) are used in shallow water with rapid current and hard bottom. In a small "cranky" pitpan this method of travel is not agreeable, especially to a newcomer; each time the boatman, who stands up at the bow, push with their poles, the canoe begins to lurch as if it was going to upset. The captain sits at the stern and steers with a paddle.

PADDLES.—The paddles (M.: *kwahi;* T. and P.: *kawaß;* U.: *wdihna*) are broad bladed and made generally of mahogany or cedar. They measure from 4 to 5 feet in length and are often roughly polished. Larger paddles are also used, especially by the steersman, for the propelling of the bateaux. At its upper extremity the paddle terminates into an enlargement or "ear" (M.: *kyama;* S.: *tapani, tapaka*), which serves as grip to one hand, while the other hand grasps the paddle about 2 feet farther down. The paddles are moved vertically along the gunwale of the boat, the blade forcing back the water with main strength applied and very quick strokes.

SAILS.—In former days the Miskito are known to have employed sails (M.: *kwaliara;* T., P.: *asna nohni;* U.: *asna nohka*[25]) of native

[25] These names literally mean "large cloth."

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224 4 o'clock; that is when the animals and birds are feeding. During the remainder of the day the forest is quiet, and most of the birds roost in the dense treetops.

487 224 TRAVEL TO THE HUNTING GROUND.—Travel is effected chiefly by small pitpans, for the Indians are canoe men by necessity, the rivers being their roads. They leave their boat at a certain spot, the parting point of a trail leading to a good hunting ground, that is, a region abundant in fruit trees. To a stranger such hunting trails are barely perceptible; here and there marks on trees made with the machete and broken twigs indicate the direction. The Indians always travel in single file, even when there is a broad road, or when they traverse open country. In marching they always glance at the sun and they observe the direction the clouds are moving, that is from northeast to southwest on the Mosquito Coast. Intuitively they keep in their mind a mental picture of the direction they came from. They walk along, silent and watchful, and at times stand still to listen.

224 STALKING.—The Indian is an expert stalker, but not a true sportsman; he rarely shoots at the game while it is in motion, except in the midst of a flock of flying birds. He therefore rarely misses the mark, but is not necessarily a good marksman. Owing to his scarce clothing he moves about the forest without making any noise. His color also appears to a certain degree to assimilate with the forest.

IMITATING THE CALL OF THE GAME.—The Indian huntsman imitates the call of animals and birds, in order to call them within arrow or gun shot. Bone whistles (M.: *kyaki wasbaya;* S.: *malka kuñ*) are used to lure the agouti (*Dasyprocta* sp.) under certain trees at the time when the latter drop their fruits. This trick is especially successful during the pairing season of certain animals. The Indian is thoroughly acquainted with the habits of the game.

HUNTING DOGS.—A lot of skinny, mangy dogs, esteemed for their skill in stirring up the game, are found in the Indian villages. With the aid of large dogs trained for the purpose, the jaguar is cornered and the puma is driven up a tree, where it may easily be shot by the hunter. When the Indian ascends a stream he keeps close to the river bank and lets his dog range the woods. The latter, upon scaring up some game, will give tongue immediately and endeavor to drive it to the water. This is the common way of hunting the paca which lives at the river bank and plunges into the water when pursued. This rodent also enters hollow trees and burrows in the ground and is then difficult to secure. Its meat is delicious and is appreciated by the average foreigner.

224 824 Before leaving for the chase the dog's snout is rubbed with certain herbs, so that the game shall not be able to smell it. This procedure is also supposed to clear the scent of the dog and sharpen his perceptions. An infusion from a small parasitic plant, called in Spanish

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"lengua de venado" (deer's tongue), is administered by the Sumu to the hunting dogs when they wish to get a deer.

HUNTING WEAPONS.—Muzzle-loading shotguns (M.: *raks, rakbus;* S.: *arakbus, arakbus*) are now used on the chase by all the Miskito, but bow and arrow (see Hunting and Fighting Implements) are still employed by the Sumu for that purpose. The arrow is not discharged at an object more than 75 feet away, but it has the advantage of not scaring the other game in the neighborhood, as does the discharge of a gun. Upon meeting a drove of peccaries, the hunters surround it, and each one of them will attempt to shoot several arrows before the scared game have found an outlet to escape. Three or four arrows are generally taken along by each man, as the wild cane shaft generally breaks during the struggle of the wounded animal; the larger game may even break the hardwood foreshaft or the iron head of the arrow.

Snares, traps, and slings are seldom used to-day. The Kukra are said to have been expert in capturing big game by making a deep hole in the neighborhood of fruit trees. It was carefully camouflaged with the aid of branches and leaves, and a small trail was cut to lead the victims to it.

DEER.—Nocturnal animals, especially the two small species of deer found in the country (*Odocoileus* sp. and *Mazama* sp.), are hunted occasionally with the aid of torches. Toward the close of the dry season the savanna is also fired and drives are organized to hunt deer or other animals, which are driven in a corner, where they are easily secured. Deer, agouti, and birds are the chief game found in the savannas and along the coast.

PECCARY.—The white-lipped peccary (*Tayassu* sp.) is highly esteemed as meat; it travels in large droves, which may be heard from some distance. Occasionally it charges the hunter and forces him up a tree; some bushmen claim, however, that all one needs to do in such circumstance is to step behind a large tree, whereupon the animals keep on rushing forward without attempting to turn. The smaller collared peccary (*Pecari angulatus*) has a dorsal gland which Europeans regarded as the navel in former days; this gland has to be cut off immediately after death, otherwise the flesh can hardly be eaten. The weight of these beasts may range from 50 to 100 pounds. The peccaries, like most of the other edible animals, are supposed to have an owner, who keeps them shut up at times, and does not release them unless the sukya practices certain rites of incantation and makes a small offering.

OTHER MAMMALS.—Among the other game animals the most esteemed are two species of monkey, the spider monkey (*Ateles* sp.) and the capuchin monkey (*Cebus* sp.). The tapir (*Tapirella bairdii* syn. *Elasmognathus bairdii*) is considered a special delicacy in certain regions of the Mosquito Coast; in other districts its flesh is said to be

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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in coconut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lāsa, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramāra;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tawa*) and several species of granadillas or fruits of passion

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to frighten that feline and drive it away, by shooting arrows at it, making great fires, and beating drums. The same belief is held by these Indians with regard to a solar eclipse (T., P.: *ma nawa kawe;* U.: *ma nawa kasya* "the jaguar is eating the sun").[78] 821

The Miskito, however, do not share in this superstition; they call the lunar eclipse *kuti di-akura alkan* "the moon has caught his mother-in-law," and the solar eclipse *yu di-akura alkan* "the sun has caught his mother-in-law."[79]

SNAKE CHARMING.—Snake charming is practiced on the Mosquito Coast by Negroes chiefly (native Africans especially), but some of the Miskito are also supposed to know this art. In order to remain invulnerable against the bite of any snake, these people are said to drink from time to time an infusion made by boiling the guaco weed (*Mikania* sp.) in water. The same effect may be obtained by applying a little juice from the latter plant into a small incision in the skin. The chewing of a few guaco leaves every day is also supposed to be an efficacious preventive against snake bites. The best snake charmers are said to eat the head of the reptile after having extracted the poisonous fangs; others merely cook their food with a little fat extracted over a slow fire from the head of a snake. The snake charmer must submit to restrictions in diet during certain periods of the year; he must also abstain from sexual intercourse with other women but his own, lest he might lose his powers. 789 [751]

In order to capture a poisonous snake without any danger to himself, the snake charmer chews a little bark from a certain shrub (M.: *pyuta sakka*) and then spits upon the head of the reptile. The latter is immediately stupefied and becomes absolutely harmless. [824]

Many people are supposed to keep tame snakes in their houses or fields in order to guard their property. These reptiles act as watchdogs and will bite any intruder. The more ignorant Ladinos, who call such a snake "sontín" (from the English word "something," it appears), believe that this habit is practiced by almost all the Indians and Negroes of the Mosquito Coast. 231

CAMOTILLO POISON.—This is supposed to be a deadly poison with the aid of which the intended victim will die at a specified date, if everything has been prepared the right way. Even if the victim should know that camotillo has been administered to him he can not escape from a lingering death, for science knows of no way to counteract its effects. 278

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[78] The Cuna Indians of Panama believe that eclipses of the sun or of the moon are caused by a demon—half dog, half woman—which starts eating those heavenly bodies; these Indians drive the demon away by shooting at it with miniature arrows (E. Nordenskiöld, Comparative Ethnographical Studies, vol. F, pt. 2, Göteborg, 1920, p. 20).

[79] Sun and moon are considered masculine in the Miskito language.

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liquid to the people present, but none of them dares to inspect it, not being immune from its effects as are the poison doctors and the foreigners. During the last two decades the fear of buried poison has spread to the Tawira-Miskito and to the Sumu; these Indians believe that the Miskito from Rio Coco are especially dangerous on account of their habit of killing their enemies with the aid of buried poison. Certain charms, as, for instance, the bitter antidote bean (*Fevillea cordifolia*), are occasionally carried to ward off the effects of such witch poison.

DREAMS.—The Indian pays great attention to dreams (M.: *yapri sdukkan;* T., P.: *amana;* U.: *amiñna*). When he dreams that he has killed plenty of game he is certain to have good luck in the chase on the following morning. If he dreams of an accident he refuses to leave the settlement during the next few days. When he dreams of strangers, he expects a visit in the near future. The sukya, while curing a sick person, invokes friendly spirits in order to obtain from them during the dream information regarding the nature of the illness.

HAUNTED TREES.—The silk-cotton tree (see Religion, etc.) and the various species of figs (*Ficus* sp.), especially the giant chilamate or higuero, are said to be haunted. The Indians and Creoles believe that these fig trees flower only during the night and hold the fig to be the true fruit. Any one daring to go under the tree about midnight will be able to see the blossom and after that will be favored with good luck in anything he may attempt. This belief is shared by the ignorant Ladinos, who claim that the fig trees flower only on Good Friday night and that a blanket spread under them at midnight will be covered with small blossoms on the following morning.

MAGIC AND SORCERY: SUKYA, OKULI, SPIRITIST, OBEAH OR VOODOOISM

SHAMANS IN GENERAL.—Among these credulous people a great influence is exercised by the shamans, of which there were formerly only two categories, the *sukya* and the *okuli*. Of the latter there should be only one at a time, but of the former there is one in almost every larger village. In recent years two other sorts of shamans, the *spiritist* and the *obeah man*, have appeared on the coast.

These shamans play a great rôle in the life of the Indians, for they act as medicine men, doctors (see Hygiene: Diseases and their cure), augurs, conjurers, magicians, wizards, diviners, rain makers, spell-binders, priests, preachers, teachers, guides, advisors, counsellors, depositaries of tribal traditions, and the like. Their opinions were formerly of the greatest weight in tribal assemblies. Still, there is nothing characteristic about them in the way of ornament or dress,

361 streams. The villages and their populations were studied from Bilwas Karma to San Carlos. (See map.) The villages themselves are perched up high on the banks so that floods will not carry them away.

362 Once a house site has been determined the Indians clear the bush and all large trees, that may endanger the house in case of storms, are felled. The house is usually of rectangular design. Four posts or more are used to hold up a sharp sloping thatched palm leaf roof *(bahna)*. In many houses these roofs extend to about five feet off the ground. The posts are usually of ironwood. Several varieties are used for thatching. [321] such as the *cohune (Attalea cohune)*, *skomphora*, *cola de gallo* or *suita (Calyptrogyne sarapiquensis)* and *caña danta (Geonoma* sp.). These palm leaves may last from for to five years as a roof. Although many Indians use nails today, lianas are still used to bind these structures together. The sides of the houses may be made of split bamboo or boards. Most houses have a sort of loft *(tint)* immediately beneath the roof. It is formed by laying split bamboo or boards across the beams and is reached with the use of a ladder. Various forms of bamboo wattlework may make up the interior walls. Most of the dwellings seen have the floor elevated from the ground at a distance of three to four feet. Thus the houses appear to be set on a series of stilts.

Formerly long communal houses or multiple family houses were used by tribes. Today this practice is abandoned and the family type house is what is found. It must be noted, however, that although many houses are raised from the ground, one occasionally encounters a more primitive dwelling where the family live directly on the ground clay with just a low overhanging roof for protection. But this process can only serve as a temporary shelter since the torrential rains would quickly wash away the household effects.

352 Iron stoves for cooking are common in most houses and in some cases [313] the stove is in a separate house (cookhouse). Many old crates, wooden 354 boxes, and bamboo devices are used for tables and chairs. Beds are made of split bamboo and are raised on posts two to three feet from the floor. Recently hammocks have become popular in the area. They may be purchased from the traders or hand made with cotton, tree bark or Bromelia fibers. Small hammocks are used for children.

[373] Pine wood torches are used for illumination at night and in some cases fiber clusters are impregnated with oils or waxes and lit up. Under the roof the fishing, hunting and agricultural implements are kept.

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301 ments. The Sumu also carried the nails and teeth extracted from their unhappy victims (M. W.: 305). The seeds of the "lágrima
[824] de San Pedro" (*Coix lacryma-jobi* L.; M.: *twi ma;* S.: *am minik, am mak*) are still in great favor.

In modern times such necklaces are nearly always made from small colored glass beads (M.: *lilyura;* T., P.: *ala;* U.: *tasaŭka*) of foreign manufacture. Bead ornaments are also worn by both sexes around the wrist, at the ankle, and below the knee. On festive occasions the men also put "hatbands" of beadwork around their hats. The Sumu women seldom wear the beads worked in a pretty design, as do the men, but they put the whole "hank" around the neck, just as they buy them in the shops, fastening the ends at the back of the neck. Sometimes they wear such a large quantity of these beads as to hinder them considerably in following their daily occupation.

301 FEATHERWORK.—Feathers from certain bright-colored birds, as parrots, toucans, macaws, curassows, etc., are made into ornaments
287 by attaching them to a string or to a thin vine with the aid of thread from cotton or silk grass fiber. Such ornaments are comparatively rare now; they are seen chiefly at the festival of the dead. The art
232 of the "tapirage" (from a native name of the Guianas), or artificial means of obtaining yellow or red plumes from parrots or other birds, as is still done in South America, appears to have been known to the Sumu in former days. For this purpose they used the secretion from
● [825] the skin of a common greenish-blue frog (*Dendrobates tinctorius*) with black stripes and spots over the whole body, including the legs, which was rubbed into the skin of the parrot, the subsequently appearing young feathers being yellowish red instead of green.

301 PECTORAL PLATES.—M. W. (308) mentions a thin breastplate worn by the Miskito on festal occasions; it was made of a Spanish dollar piece beaten out flat. Columbus also mentions such gold ornaments which were worn around 1502 on the Atlantic coast of Costa Rica and Panama.

301 NOSE AND LIP ORNAMENTS.—The nasal septum was formerly per-
304 forated for the reception of a rod of bone or cane, an ornament which has now entirely disappeared. Dampier (I, 32) describes and depicts a curious cone or bell shaped ornament of turtle shell worn by the Kukra males of Corn Islands in the underlip. During early childhood the lip of the boy was pierced and the perforation kept open by means of little pegs. When arrived at the age of 14 or 15 (probably at the age of puberty) the boy inserted in the opening an ornament of tortoise shell, the under part of which was allowed to hang down over the chin; it was worn the whole day long, but it was taken out at night. About the latter part of the seventeenth century the Miskito wore on the chin a pendent plate of brass or shell, which was supported by a turtle-shell hook inserted in the lower lip (M. W.: 308).

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larger settlements of the country; they ignore the Indian languages, however, and their activities are practically limited to the Ladinos.

On the other hand, the Moravians (*Unitas Fratrum*), who came to the coast in 1849, have succeeded in evangelising most of the Miskito and some of the Sumu as well. They use both English and Miskito in church and school. The first effort by Protestants to introduce Christianity among these Indians is the one made by English Puritans, who in 1630, under the Earl of Warwick, took possession of the island of Providencia, situated off the Atlantic shore of Nicaragua. They opened up commercial relations with the Miskito of Cabo Gracias a Dios and maintained themselves in the island until 1641, when they were ejected by a Spanish fleet. In those days a number of the Indians traveled to Providencia, where they became familiar with the Lord's Prayer, the Creed, and the Ten Commandments (Sloane, a: I, p. LXXVIII).

SUPERSTITIOUS BELIEFS: OMENS, CHARMS, AMULETS, TALISMANS, ETC.

BAD OMENS.—Anything occurring out of the ordinary is considered a bad omen (M.: *yalwaia;* S.: *dilak*), and some calamity is believed to befall one or more of the persons present.

Should the hunter, for instance, miss the game an unusual number of times on a certain day, he considers this the sign or token that he will soon fall sick and perhaps even die.

If someone should quite involuntarily let the paddle drop in the water, this is accepted in the light of a token of something evil about to happen.

Should the dog act in a peculiar manner and run around barking all about the house, although investigations will show that there is nothing wrong anywhere, this is a bad omen and soon some one of the inmates will die.

The crowing of a hen is also taken for a bad augury. Ladinos and Creoles participate in this superstition, and they immediately catch the fowl in question and wring its neck.

BIRDS OF ILL OMEN.—There are a number of birds which cause disease and even death when being seen, either at any time or under certain circumstances only. They should particularly be avoided by the Indian when he is hunting or working in the bush on a Sunday, but this belief is undoubtedly traceable to Christian influence. The Indians refuse to eat the flesh or the eggs of certain melancholy birds, believing that by so doing they will go wailing through the bush like the lonely bird itself. They also refrain from killing certain birds believed to have a keeper or owner invisible to man, and who would revenge himself.

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Certain owls and the snake hawk (M.: *waka*, *waksma*; S.: *makowa*) are especially feared, and the mere sight of them is supposed to cause disease or death.

The goat sucker (*Caprimulgus* sp.), a very common bird, is also feared owing to its uncanny nocturnal habits, the swiftness and peculiarity of its flight, and its note, which breaks the silence of the night. In Costa Rica its bones, dried and ground to a fine powder, are used by the Indians as a charm against their enemies. The powdered bone is mixed with tobacco in a cigarette which when smoked causes certain death, according to the popular belief.

A large spotted nightbird (M.: *boa*, *ukwas*; S.: *yo*), which appears sometimes in the neighborhood of the settlements at daybreak, is likewise feared.

The note of a nightbird, resembling the Mexican cuckoo and known by the onomatopoetic names of *pikus* (M.) and *tiks* (S.), is supposed to give a flat denial to any assertion made at that moment. When heard immediately after some one has made a remark, it means that the person in question has told a lie, or that he is unable to perform what he intended to do. If the Indians are, for instance, discussing some project, as a journey, festival, hunting expedition, and the like, the cry of this bird will cause them to put it off. When the hunter hears its voice he returns home immediately, knowing that luck will be against him on that day. At the mahogany camp on Rio Camanan (Rio Coco) a young Sumu from Rio Patuca was discussing with some of his countrymen the route to be followed on his journey back home, his period of contract having expired, when suddenly a loud *pikus* was heard near by. The Indian immediately became alarmed and despondent, and it took some time to calm his fears.

SUPERSTITIONS REGARDING OTHER ANIMALS.—A small ugly species of croaking lizard, called "galley asp" by the Creoles (M.: *ahuk*; S.: *kuhuk*), is held to be very venomous. The Indians claim that after having bitten some one it will rush immediately to the nearest water; the person bitten must do the same, and whichever reaches the waterside first will survive (Bell, a: 265).

The numbadora snake (M.: *matsikas*) is said to be very savage at certain times of the year, when its bite may become fatal. Others claim that, if molested, it will pursue a person, twist round his body, and lash him with its tail; it especially attacks a woman *enciente*.

The boa snake is said to contain a little venom in its fangs, which it discharges in the early morning only; at that time of the day its bite is therefore considered fatal.

A small speckled tortoise (M.: *sunakrás*; S.: *pulan-kuwa*) is said to be very thoughtless, and to lose its way frequently, as it may be found occasionally on the hills, far away from the nearest stream.

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The Indians do not eat it, believing that by so doing they will become forgetful like the tortoise itself, and become lost in the bush or misplace things, and the like.

Strange animals are regarded as evil spirits and their appearance is a bad omen; the Indians do not dare to kill them. Heath, while stopping with his Miskito crew from Kiplapihni at an empty house at Burimak (middle Rio Coco), came across a strange bat, which event he relates as follows: "We saw clinging under the palm roof a small snow-white bat. Some felt sure that it would suck our blood in the night; so it was killed, but turned out to be a perfectly harmless creature with very beautiful fur. But now, as no one present had seen such a white bat before, some declared that its coming was a bad omen; others that it was sent by an evil spirit, or was even more likely itself to be an evil spirit; that the man who killed it would soon die of a pernicious fever, etc. It took some time to calm the fears of the women especially." (Heath, b: 377.)

CHARMS, AMULETS, TALISMANS.—Some of the ornaments are undoubtedly supposed to act as charms, amulets, or talismans, as they are worn chiefly by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tattoo, etc., seem to have had originally a religious and magical significance rather than a desire to embellish the appearance. Red and black paint is still regarded a prophylactic against disease.

Charms are used for managing the opposite sex, as a cure for barrenness by women, in order to have a male child, and for luck in hunting and fishing. Jaguar teeth are carried as talismans for courage, strength, and to stimulate virility and excite venery.

Charms on fruit trees have the object of increasing their yield and keeping birds, animals, and even man from plundering them. In order to render fruit trees more productive the Miskito drive a nail in the side of the stem facing the west. When they make staffs for turtle spears they also prefer utilizing the west side of the stem of the pejivalle palm, believing that part of the trunk to be more durable and resistant.[75]

Celts or stone axes, which are occasionally dug up in the fields, are regarded as "thunderbolts," and were worn in former days as amulets for protection against lightning. They were also supposed to render the bearer brave and enduring. They are considered very efficacious in healing certain diseases, and the sukya makes use of them in practicing his rites of sorcery. On account of these proper-

[75] The Creoles, in making tea from the medicinal bark of certain trees, likewise prefer using the bark on the side facing the sunset.

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781 length the wand will reveal the truth; if not the string must be altered and the process repeated until it is in its right position. Questions relating to the present and future will then be answered by the aukya, correctly as he states, though I must confess that the queries I propounded were never replied to very successfully, but I was an unbeliever, and it is a notorious fact that spirits are put out of their calculations by the incredulous."

789 CONTROL OF RAIN AND WIND.—Rain and wind can, according to the Indians, be produced or stopped at will by human, animal, or spirit agency. Thus while paddling down Rio Plátano with a Miskito crew, I noticed clouds gathering windward and threatening rain. The captain of the boat, upon noticing them, motioned the rain with the right hand to pass on, with the following words: "Do not come here as we do not want to get wet now! We have no shirt nor trousers with us to change, and if you will wet us we will have to remain in the moist clothes the whole day long and suffer from the cold. Pass on to those indolent and good-for-nothing people on Rio Patuca; they are all at home now lying in their hammocks."

Bell (b: 157) relates a similar experience with the Miskito of Rio Prinsapolca: The Indians, hearing the rain coming by the noise in the distant bush, vainly tried to keep it off by blowing with their mouths and driving the breath away on either side of their faces. They also spoke to the rain, telling it of the uselessness of its coming to wet them, thus: "Pass on, pass on; we are all wet already. You need not come here; pass on to the head of the river. There is gunpowder and tinder lying uncovered on the rocks. A man is burning a plantation there; pass on quickly, lest another shower wet it before you."

Often when the Indians heard a shower coming they pushed their canoe quietly under the thick bush to hide until the rain had passed, and were much annoyed if any one talked or made any noise. The killing of a howling monkey was also believed to bring rain, as that animal belongs to the water spirit, who will be angry at such an act (Bell, b: 157).

While proceeding up Rio Coco from the port Cabo Gracias a Dios to the Miskito settlement of the same name, my two paddlers put up a small sail, and then kept on whistling in order to call the wind to help them in their work. When all their efforts were of no avail they became rather vexed and made some disobliging remarks about the "lazy wind" (*pass sriāwankira*).

821 ECLIPSES.—An eclipse of the moon is said by the Sumu to be caused by the jaguar devouring that heavenly body; their name in itself points to this belief (*wāliko nawa kasna, wāliko nawa kasya;* lit.: "the jaguar is eating the moon"). At a lunar eclipse, no matter at what time of the night it occurs, the Sumu get up immediately in order

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him. 754

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements. 583

Courtship.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yamni kâikaya sâika;* T.: *yamni talnin pananbas;* U.: *yamka talnaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *misbara kâikaya sâika;* T.: *ba talnin pananbas;* P.: *ma isihni talanin pananibas;* U.: *di dutka talnaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of 832 [825] [278]

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This obstacle overcome, the soul finally makes its entry into *Obul*, the land of plenty.[80]

THE FESTIVAL OF THE DEAD

The festival of the dead (M.: *sikro, sikkro;* S.: *sĕñ*) is the most important of the bacchanalian orgies of these two tribes. Its real significance appears to be unknown to the large majority of the present-day Indians; it is certain, however, that it has some connection with the journey of the souls of the deceased to the hereafter.

THE SIKRO OF THE MISKITO.—To most Miskito the *sikro* of to-day is only an occasion for merrymaking and getting drunk. Originally only one *sikro* was made for each deceased person, but nowadays the Indians repeat this feast several times in order to have an excuse for a drinking bout. The custom can still be observed among the "heathen" Miskito of the upper Rio Coco and of Honduras. In the remaining districts of the Mosquito Coast nearly all the Indians belonging to this tribe have been converted to Christianity.

The *sikro* takes place about a year after a death, or rather as soon as the field of sweet cassava, planted especially for this purpose, has come into maturity. Although the Miskito make a great variety of intoxicating drinks (*miska*), the one consumed on such an occasion is invariably prepared from cassava. The fermented root of this plant is generally kept in casks obtained from the foreign merchants, but in former days the drink was left to ferment in large homemade earthenware vessels (*sussi*). The expenses of the feast are borne by the relatives of the deceased, who will butcher one or two head of cattle for this purpose, but all the neighbors lend a hand at the preparation of food and drink, and they even help at the planting and reaping of the cassava.

All the men and many of the women from the neighboring settlements are expected to come, and they begin to arrive, dressed in their best attire, about sundown on the specified day. The festival lasts until all the food and drink has been consumed, that is, two or three days. The women keep apart by themselves, and do not mingle with the men, except in order to pass the calabashes of drink around from one of the guests to the other. Occasionally both sexes

[80] The Sumu never kill any of the various creatures which they will have to meet on their final journey. When they deprive a toad of its skin for the making of a drumhead, they do not kill this amphibian, but release it again afterwards, and give it a few berries from a certain tree as a payment for its skin. The parents also admonish their children not to ill-treat animals, especially such as may be useful to them on the voyage to the hereafter. Similar conceptions are met with among primitive Indian tribes in various parts of the Americas who have had little or no intercourse with Christians.

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MISCELLANEOUS BELIEFS REGARDING FICTITIOUS BEINGS SAID TO INHABIT THE FOREST AND THE WATER

Living in dark and gloomy forests, the limits of which are unknown to them, the ideas of the Indians naturally turn toward the mysterious and wonderful, and they people in their imagination the unexplored regions of the country with fabulous monsters, or *unta dukya* as the Miskito call them generally.

DWARFS.—In certain parts of the forest may be found some dwarfs (M.: *sudta, alwuk-sirpi;* S.: *sasá mólkni, asuá mólkn*) of the size of children, but they are considered entirely harmless, and an encounter with one of them is even held to bring good luck.

WANDERING JEW.—The belief of the existence of a wandering human being, the *tawisti sari-ka* or *sawa-sari*, so named by the Paya, has also spread to the neighboring Twahka, who have translated the name into *tik-suba*, but it is unknown to the other tribes; the Miskito of Rio Patuca, however, appear to call this mysterious being *tiamila*. This man continually travels through the world with one of his hands placed in a cooking pot from which he is unable to extricate it. From time to time he beats with the pot against the trees, thereby producing a deep thunderlike noise, in order to break the vessel and liberate himself, but all his efforts are in vain. When he still was a boy, he was in the habit of eating the best part of the food before mealtime, leaving only the cassava and bananas for the other members of the family. His parents frequently scolded him for doing that, but he would not listen to them. One day the cooking pot closed up at the very moment he had his hand inside, and he was unable to withdraw it. Since that time he travels continuously through the bush like the Wandering Jew.

PECCARY OWNER.—The peccaries, especially the variety called warree, are said to have a keeper or owner (M.: *wari dauan;* T., P.: *sisi dauiaua;* U.: *sawi dalawasa*), who inhabits the caves of the interior, and occasionally retreats thereto with all the animals under his custody. In former times he is said to have been visible sometimes, accompanied by a drove of very fierce, large, white warrees. In order to guide his animals to a good feeding ground, he places with each herd a pet bird (M.: *wari yula;* T., P.: *sisi turukma;* U.: *sawi turukma;* these words literally mean "companion of the warree"). This bird, which may generally be found around a drove of peccaries, feeds probably on the ticks or other parasitic insects living on these animals. The Indians do not dare to kill it, as by such an act they would incur the wrath of the peccary owner. Some details pertaining

1: Conzemius M-4, 5 (1921) 1932
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776 825 to this fictitious being are given by Bell (b: 221–224). I submit herewith a Sumu story dealing with the peccary owner, which I propose naming:

THE ADVENTURES OF THE PECCARY HUNTER

539 A Sumu went out to the bush to hunt the white-lipped peccary (*Tayassu* sp.). Suddenly he came upon a drove of a white variety, called *sdkakaya*, with very long tails and tusks. All of them were very fat. Our Indian had never seen a specimen of this variety before, but he had heard of its existence from the older people, who had, however, never succeeded in killing one.

He stalked upon them, but at the very moment he got his bow and arrow ready to shoot the whole drove made off at great speed. He followed their trails, determined not to go home without one of them. After a while he caught up with them, and saw them feeding on the fruits of the hog plum tree (*Spondias lutea* L.), but again they made off all together when he was at the point of sending an arrow at them. This was repeated again and again, and our Indian was unable to make use of his arrows. Still he kept on following them.

Suddenly he saw the whole drove disappearing into a cave. He followed, although it was pitch dark inside, for he could smell and hear them. After a while he came to a wall of solid rock which blocked his passage. He then made a small incision under his tongue and applied a little blood crosswise upon the rocks. Immediately the latter receded and he was able to proceed. Again he could hear and smell the peccaries in front of him. This was repeated several times.

Finally the Indian saw a streak of light ahead of him and directly he found himself outside the cave in a strange country, which abounded in the various varieties of peccaries. The large white kind, the *sdkakaya*, must have been the favorite food of the inhabitants, for in every house they were preparing a specimen for the table. The people were not friendly toward our Sumu, and they resented his having come to their land. He explained to them how it all happened, and that he was anxious to secure some meat for his wife and children. They told him then that they were the owners of all the peccaries, and that occasionally they sent some droves to the Sumu country, so as to enable the inhabitants there to have some meat to eat occasionally. But the white peccary (*sdkakaya*), they proceeded, "is for our exclusive use and for that reason the Sumu have never been able to shoot any of them." The people fed our Sumu and gave him a whole white peccary to take back home to his family. But they warned him not to mention anything about his adventure, as that would cause his immediate death. Then he was told to close his eyes, and some one took him by the hand and led him away. After

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a little while, feeling himself alone, he opened his eyes, and looking around, he found himself only a few steps from his own house. 539

Upon getting home, his wife wanted to know where he had been so long. He refused to tell the truth for fear of the revenge of the people from the peccary country, and told her that he had been lost in the bush. But she noticed that he was hiding the truth and kept on insisting that something extraordinary must have happened for his having succeeded in killing a *sâuakaya*.

Finally he agreed to tell. He sat in his hammock, while all the neighbors surrounded him to hear the details of his strange adventure, and then he proceeded to narrate everything that had happened to him since he left home. But the moment he finished his story he died.

WITCHES.—Certain people of either sex are supposed to be greatly addicted to witchcraft, and to be able to transform themselves at will into owls or "lechuzas" (M.: *imi yula* or *kimi yula;* S.: *yala môih*[21]). 754

Some bad people transform themselves into a smaller species of owl (T.: *yarak;* U.: *sôi*) and in their zoömorphic form introduce themselves during the night into the huts of their enemies, when the latter are asleep, in order to carry off the small children. The Miskito do not participate in this belief.

CYCLOPS.—In the bush lives also a curious being, shaped somewhat like a giant human being, but having a head similar to that of a dog. It has only one eye, while its large mouth is at the navel. 776

WATER NYMPH.—The mermaid or water nymph (M.: *liwa;* T., P.: *was molhni;* U.: *was sirâu*) is an evil water animal, which occasionally causes snags and strong ripples where the water otherwise is very smooth. It drives the fish away so that the Indian can not catch anything, and it incites the alligator to attack the canoes and upset them. It also assumes the shape of a beautiful woman and walks on land to entice the young men down to the waterside, when suddenly it pushes its victim into the water and devours it. Its head is that of a human being, but the body resembles that of a fish. This monster is also said to inhabit the sea, where it occasions waterspouts and hurricanes; the Miskito living at the coast call it also *kabo wlaska* "sea spirit."

WAIWIN OR WAIWAN.—This name is applied by Miskito, Sumu, Rama, and Creoles to a black, doglike bush animal, with a nose shaped like that of the large anteater and with fiery eyes similar to balls of fire. It corresponds approximately to the "cadejo" of the Ladinos. Its claws rattle on the ground as it runs along with great swiftness. It spits fire and does not do any harm if left unmolested, but will throw down on the ground any one trying to stop it. There 825

[21] Lit., "people of the stars."

1: Conzemius M-4, 5 (1921) 1932
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825 is also said to exist a white variety. Bell (a: 254) describes it as a terrible monster, like a horse, but with "jaws fenced round with horrid teeth," whose native place is the sea, whence it issues from time to time to its summer residence on the hills, and at night roams about the forest in search of human and other prey.

ANTHROPOID APE.—On the unexplored mountain tops is said to be found a tailless anthropoid ape (*ulak*, *uluk*), reminding of the gorilla, orang-outang, or chimpanzee of the Old World. It is of erect position, about 5 feet in height, covered with black hair, and has the teeth turned backward. It is greatly feared, as it is supposed to carry off human beings of the opposite sex. This belief is also found among the other populations of the Mosquito Coast; the Rama and the Creoles call this ape *yohó* or *yuhó*, while the Paya and Ladinos apply to it the Spanish-Mexican name *sisimite* or *chichimite*.[32] Some Indians claim that this mysterious being has been seen several times during the last 20 years around the Guarunta Mountains, which extend northward of the lower Rio Coco. C. Acuña refers to men from South America with their feet turned backward. (Relation of the Great River Amazon. London, 1698, p. 158.)

KASWAKI, WAKUMBAI.—There is a wasp-eating bird, traveling in flocks, which is greatly feared by the Indians. It gives out an unearthly cry, somewhat like a hoarse human voice, and is known by the onomatopoeic names of *cacao* (Spanish), *katáuhkatáu* (M.), *kutáu* (T.), and *katáuhki* (U.). The Miskito also call it *pnamaka yula* "companion of the Panamaka," while the Creoles have given it the name *buckra quam* "white man's guan."

The Indians do not dare to kill this bird, as that would bring about the sudden appearance of a bluish, horse-shaped ghost (M.: *kaswaki*; S.: *wakumbái*[33]); the latter has a single leg in front and two behind, and travels through the air mounted by its owner. The simple sight of this supernatural being is supposed to cause death.

LUHPALILI (M.), TISNINI (S.).—This is a long quadruped of short stature, somewhat resembling a weasel, of a pretty black color, but with spotted head. It does not harm any human being, but is greatly feared by all animals, large and small. It chases especially

[32] Regarding the alleged discovery of an anthropoid ape on the borderland between Colombia and Venezuela see Georges Montandon, Découverte d'un singe d'apparence anthropoide en Amérique du Sud, in Journal de la Société des Americanistes de Paris, Paris, 1929, fasc. I, pp. 183–195, and fasc. II, pp. 411–412.

[33] This name appears to be phonetically related to the word *akamboüe*, by which term the Island Carib, in the language of the males, called the spirit of a person (C. de Rochefort, Histoire naturelle et morale des Iles Antilles de l'Amérique, Rotterdam, 1665, p. 471).

1: Conzemius M-4, 5 (1921) 1932
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larger beasts, like the jaguar and the puma, and kills them by introducing itself into their stomach.

WATER TIGER.—The water tiger (M.: *li lamya;* S.: *was nawa*) is supposed to be a manateelike animal, but covered with otterlike, glossy hair and a mane. Different species are said to exist, which have the same variety of color as the various species of Felis, the black variety being, however, the most common. This beast has webbed feet and walks awkwardly on land, but it is very swift in the water. It is found chiefly in the larger rivers among the rocks, and will devour any one swimming in the neighborhood or falling into the water; domestic animals and even men are said to have occasionally fallen victim to it. The Indians claim to have shot at it, but never succeeded in killing a specimen.

GIGANTIC BOA CONSTRICTOR.—A very large waula or boa constrictor (M.: *wûla tara;* T.: *wûla;* U.: *wayil*) with two horns on the head like a deer [6] is said to inhabit certain large lagoons in the pine ridges, far away from the nearest Indian village. It is claimed that the common waula or boa turns into such a monster when it reaches old age, and that it then retreats into deep lagoons. Man has no power to kill such a boa constrictor, as bullets have no effect on it; it can be destroyed only by a stroke of lightning.

The creeks leading to the lagoons inhabited by the monster are generally rich in all sorts of game, for no one dares to ascend them. It is claimed that in case anyone should be foolhardy enough to paddle up such a creek, presently a rumbling of thunder is heard; then the water reverses its course, flowing at a tremendous speed back to the lagoon directly into the mouth of the boa constrictor, which swallows the canoe with the intruder. The boat-bill heron (M.: *ukuku;* S.: *awakia*), a most uncanny night bird, is said to be found at the mouth of such creeks in order to warn off intruders.

FABLES OR TALES DEALING WITH BEASTS AND BIRDS

The Miskito know a great number of tales in which animals and birds act, think, and talk like human beings; they are supposed to possess spirits and to live, eat, drink, love, hate, and die just like the Indians.

These fables remind somewhat of the adventures of Ananси—a sort of god or culture hero—of the Gold Coast; or, Turtle of the Slave Coast; or, Hare (the Brer Rabbit of the United States Negroes) among the Bantu. Heath (a: 52) has drawn attention to the re-

[6] For this reason the Ladinos call it "masacuata" (from the Mexican *masatl* "deer" and *coatl* "serpent").

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DELIVERY.—Only females are present at childbirth, the elder or more experienced ones acting as midwives. The methods employed to hasten delivery are in general very brutal, and they lead occasionally to the death of both mother and child. One of the befriended persons present severs the navel string with the aid of a sharpened piece of bamboo or a wood splinter, and then ties it with a cotton thread. In virtue of this act she will henceforth be considered as a blood relation to the newborn child and the latter's parents as well, and they call each other reciprocally *lapya* or *lakpya*. This corresponds loosely to the *compadre* and *comadre* system of the Ladinos. The *lapya* appears to have been limited in former days to the Miskito, but lately it has spread to the other tribes of the Mosquito Coast—Sumu, Rama, and Paya. The afterbirth is buried by one of the women as soon as it is expelled. The same is also done with the umbilical cord, in order to prevent pigs, dogs, or other animals from eating it up, which may result in sickness or death for the baby.

COUVADE.—Traces of the couvade may be observed among both Miskito and Sumu. During the first days of the newborn child the father will refrain from hard work and keep out of the bush. He will also abstain from certain foods and from salt and chili pepper. The mother also has to keep a diet. Exquemelin (Engl. edit.: 253) denies the existence of the couvade among the Miskito, but the actual facts have probably escaped his observation. This author states that the mother bathes her baby at the next river, wraps it up in a *calalas* (=*kwala* "cloth") and then follows her usual occupation. According to my various informants the bath of the mother and the child is postponed until the third day after delivery. But the mother is considered impure for from one to two weeks longer. After that period has elapsed she may return to her husband, who prepares a feast with food and drink in honor of the baby and the *lapya*.

BIRTHMARKS.—Birthmarks (M. and S.: *wasaki*) are ascribed by both tribes to the failure of the mother to obtain during pregnancy a certain article of food for which she had a vehement desire. The Indians supply, if possible, a woman *encinta* with any kind of food for which she may ask. If during that state she should have a craving for a slice of pineapple the husband will do his utmost to procure the fruit. Should the prospective mother learn that it is impossible to obtain it, and then thoughtlessly pass her hand over her head, breast, or arm, the child would be born in due time with the mark of a pineapple at the corresponding part of the body. A somewhat similar belief exists among the ignorant people in large areas in Europe.

A certain skin disease is found sometimes on the newly born child, and is known among the Miskito by the name *dus arbias* "gnawing of trees." Its origin is traced to the fact that the mother, while *encinta*,

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826 heard the peculiar sound produced by two trees rubbing against each other during high wind.

842 [847] [165] STERILITY AND ABORTION.—Sterility is considered a disgrace, and the average husband will abandon his wife if she is unable to bear children. Abortion and prevention of pregnancy are accomplished by the use of certain herbs. In general the Indian woman is very prolific, but infant mortality is also very high.

847 INFANTICIDE.—In former days babies of the female sex were often exposed and left to die, as they were supposed to bring ill luck. Male children are always received with great joy, which the father manifests by shooting off his gun. Deformed children were buried alive in olden days, as they were supposed to be possessed by an evil spirit, or to have been begotten by such one. A similar belief is held by many other tribes in both Americas and accounts for the total absence or scarcity of crippled persons in such regions.

847 845 Twins were also exposed, as they were said to be a proof of the wife's disloyalty to her husband; the latter considered that only one of the two infants could possibly be his. If twins were of different sex the female was always killed. Lehmann (c: I, 405) states among the Miskito the red dog (*pdûan*) is the master of the twins, and that for that reason these Indians whip dogs at the birth of twins (*pdûnki*), but this report needs confirmation.

854 [142] CHILD CARRYING.—The women carry their children in a long cloth which they sling over the back, tying the two ends together in front at the breast. This way the mother is not prevented from following her usual occupation, as both her hands are left free, while the child is firmly secured in a safe and comfortable position. The prevalence of bowlegs among these Indians may possibly be ascribed to this manner of carrying the infants.

855 CARE OF CHILDREN.—The Indian child receives little attention from its parents, yet it rarely cries. The parents have, however, great patience toward their offspring, and they seldom chastise a naughty child. Should they, however, lose their patience and seize the whip, they may administer fearful beatings, but such cases are extremely rare. Lullaby songs are rarely heard, but the parents tell their offspring fables, legends, and fairy tales.

862 The last child is not generally weaned until the fourth year and sometimes even longer. I have observed cases among the Miskito where the young boys alternated their mother's breast with their father's tobacco pipe.

868 EDUCATION.—As the child grows up it is made acquainted with the occupations of its parents. The boy accompanies his father on hunting and fishing journeys as soon as he is strong enough to do so. The father makes toys for him, as diminutive canoes and paddles; later he obtains small bows and arrows in order to practice shooting at birds

3: Pijoan D-5 (ca. 1945) 1946
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146 853 irritate the nipple and cause discomfort to the mother. It is at this point that considerable supplementary feeding is introduced. It is of interest to note that the teeth begin to make their appearance at about the fourth to fifth month in contrast to the average of six to seven months in the United States. The fact that iron reserves are exhausted at about the third month and that supplemental feeding occurs shortly thereafter is a curious coincidence favoring the child.

● [827] The Indians believe that food consumed by the mother produces milk and for this reason the mothers eat often and large quantities of food. The children are fed bananas early in life and even if the iron intake from milk supplemented with bananas amounts to 4 mg. a day, it is insufficient to adequately overcome physiological hemoglobin depletion. Theoretically this would soon be made up by foods rich in iron. This in fact is what is attempted by the natives themselves but the anemia is not generally overcome because just as soon as the children begin crawling outdoors form infestation occurs and a relative anemia may be maintained.

146 For practical field use, hemoglobin determinations were carried out using the Sahli equipment and 100 per cent hemoglobin was computed to indicate 15.6 gm. per cent hemoglobin in blood. For purposes of comparison between hemoglobin levels in Guatemala, Yucatán[82] and the Coco territory of Nicaragua, the averages represented:

Guatemalans (691 cases, Shattuck)	73.3 per cent
Yucatecans (2037 cases, Saunders)	71.9 per cent
(1261 cases, Shattuck)	70.6 per cent
Coco River (100 infants, Pijoán)	55.0 per cent

It is admitted that the method of hemoglobin estimation varied, i, e., Shattuck used the Tellquist method, whereas the Sahli method was used in the Coco study. Regardless of this fact, there was less altitude in the Coco Basin to provoke hemoglobin increases and secondly the incidence of insidious disease seemed greater.

Hemoglobin values in 100 infants (2-3 months old) in Zapuca and Waspam, Coco Basin, Nicaragua.

Number of Infants	*Hemoglobin value*
29	60-70 per cent
48	50-60 per cent
23	40-50 per cent

Another point of difference between this study and the others is that the findings by Shattuck was fairly representative of his territory

[82] Shattuck, G. C. A Medical Survey of Guatemala. Carnegie Institution of Washington, 1938.

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There are many ways practiced commonly by the obeah man to injure his own enemy or that of his client. He may send to the intended victim a "duppy" (evil spirit). Or he may work with buried "poison," that is to say, he buries in the vicinity of the house of his intended victim a package containing rags, feathers, bones, and the like, after which the latter will fall sick and eventually die. Again he may introduce poison in his food by means of a third person. The obeah man may attain the object in view, that is to set obeah on his enemy, by merely making a cross or some other mark on the house, canoe, or some tool of the latter, or by shaking hands with him. It is even claimed that some "strong" obeah men are able to direct poisonous snakes to the bed of the intended victim. Sometimes such a sorcerer brings about the desired effect, owing to the great credulity of the people, who are so afraid of him that they do not even dare to denounce him. 754

MARRIAGE AND SEXUAL LIFE

The Indian girl is sold by her parents for a gun or a head of cattle, but she is rarely forced to become the wife of a man whom she does not love. Before giving their daughter away in marriage the parents will satisfy themselves that the suitor is able to provide for his future wife and that he understands the manufacture of hunting and fishing implements. 583

Courtship.—The efficacy of certain drugs or herbs in stimulating virility, exciting venery, and in conquering the heart of a person of the opposite sex is believed in by these Indians, and by many Ladinos and Creoles as well. By allowing a few drops of such a "love medicine" (M.: *yamni kâikaya sâika;* T.: *yamni talnin pananbas;* U.: *yamka talnaka dikabasta*) to fall on the clothes, handkerchief, head, or body of a person, the affection of the latter may be obtained. Other herbs used in a similar manner will produce the opposite effect; such an infusion (M.: *misbara kâikaya sâika;* T.: *ba talnin pananbas;* P.: *ma isihni talanin pananibas;* U.: *di dutka talnaka dikabasta*) is used to separate lovers who will thenceforth have a profound repugnance toward each other. Certain old people are supposed to be able to prepare very efficacious remedies of this kind, which they will sell for as much as $5. Should, however, the secret of the preparation be communicated, the charge will be about five times higher. A preparation of the Spanish fly or blister beetle, of which two varieties exist, a small brown one and a larger one which is black with longitudinal yellow bars, is believed also by some to act as a love potion; others again say that it will produce craziness. In reality this insect is a poison, but may be used in medicine as a diuretic and vesicatory. The Ladinos believe that practically all the Indians and Creoles of 832 [825] [278]

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832 the Mosquito Coast make current use of these various "remedies," and that the Miskito women have the habit of mixing from time to time a small portion of their menstrual blood in the wabul for her husband, in order to keep the latter's affection.

582 PREMARRIAGE ORDEALS.—Before a young Sumu is allowed to have a wife he must give proof of his ability to shoulder the responsibilities of married life—that he is indeed a man. A council of the elder men of the village or district will investigate any complaint brought against the would-be bridegroom and he has to undergo certain ordeals. The latter consist of more or less rigid fasting, flogging, scarification, and the like. If he cries out or merely moans he will have to submit to the ordeal on a future occasion. The candidate for marriage bends down his bare back, whereupon all the married men punch him as hard as they can with their elbow. He endures the pain without a groan, for the women are there as spectators of his powers of endurance. If he is unpopular he may receive a severe beating, and occasionally accidents arise in this manner. Then an elderly man beats him with a whip made from tapir hide, consisting of two strings twisted like a rope, and having about 1 inch diameter. A young man is not considered worthy of a wife unless he is able to endure this ordeal with fortitude. If he has stolidly endured all these pains he is allowed to marry. He makes a canoe, bows and arrows, and other weapons, and he brings game and firewood to his fiancée. He also prepares the plantation for his prospective wife in order to prove that he is able to perform the duties of a future family head.

MARRIAGE TABOOS.—The children of two brothers or of two sisters are considered real brothers and sisters and they are not allowed to marry each other. The ban against the marriage of these cousins probably owes its origin to the fact that such children were often really half brothers and half sisters. Upon the death of his wife a man generally married her sister; similarly, if a woman had lost her husband, she was taken in marriage by her brother-in-law. For that reason the names for stepfather and father's brother, on the one hand, and for stepmother and mother's sister are identical in most of the dialects spoken on the Mosquito Coast. On the other hand, the children of brother and sister are not considered blood relatives, and a union between such cousins is the common, and originally perhaps the only, marriage allowed. Unions of this kind are still encouraged to this day, for it is felt that family ties are strengthened thereby.

Marriage between an Indian and a near relative of his *libra* or "covenant friend," and his *lapya* or "birth friend" is also banned, although such connections are not blood relations (M.: *taya;* T.: *mōih;* P.: *wanāih;* U.: *wanih*).

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606 of the house by a partition of bark cloth or imported calico. After he has left she comes out and follows her usual occupations. Upon his return he must give warning by striking the boat with the paddle or pole before proceeding to the hut, and she retires immediately to her own apartment. When she returns from the plantation or from fishing she must likewise give notice, and he walks away for a few minutes, until she has reached her quarters. Should the two meet unexpectedly she will quickly throw a cloth over her head, and he will pass on, turning his face away from her. Should, however, he purposely look at her, or fail to give the prescribed warning upon his return, she will consider this an insult for which she will demand payment through a third person.

This custom appears to exist among all the Sumu subtribes; it is also found among the Miskito of the upper Rio Coco, who are largely mixed with the Sumu, but it has not been observed in other parts of the Mosquito Coast. The origin of this custom is somewhat obscure, and I was unable to obtain from the Indians any satisfactory explanation regarding it. The usual answer is that they observe it because it has been handed down to them by their ancestors. According to Grossmann (b: 4), each mother stands under the special protection of the tapir, who is angry at the man who has robbed her of her daughter, and only refrains from punishing him on condition that he never looks on her. Therefore the man who has looked on his mother-in-law is fated to meet his death from the enraged tapir, unless absolved by making a payment to the wronged woman.

In former days the same taboo existed among the Miskito between a man and his sister-in-law, the wife of his birth friend (*lapya*) and the wife of his covenant friend (*libra*); or between a woman and her brother-in-law, and the husbands of both her *lapya* and *libra*.

841 MENSTRUAL SECLUSION.—During the menstrual periods (M.: *mairin siknis* "woman sickness," *kuti siknis* "monthly sickness"; S.: *tiñ dutni, tiñ dutka* "bad hand") the woman is considered unclean and she is shunned by her husband. She must not touch any food intended for other people, otherwise the latter may die. Formerly the young girl had to undergo certain puberty ordeals at the first menstrual period, but I was unable to obtain any details relating thereto.

When the Miskito woman is inconvenienced in the accustomed manner, she occupies a small temporary hut (M.: *tala watla* "blood house") built by her husband at a few hundred yards from the settlement. She remains there a couple of days. At night one of the other women joins her to keep her company, but to all the men, her husband included, the hut is taboo. While in this state of impurity the woman must not be seen by a sukya, for that would weaken the latter's connection with the spirits, and perhaps even cause his

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death. At the conclusion of the third day the woman bathes herself in a neighboring creek and then rejoins her family. All cooking or drinking vessels used by her during this period are broken and thrown away. 841

Among the Sumu similar beliefs are held with regard to menstruation. The woman, however, never leaves her home, but she remains secluded in a corner of the house, a cloth partition separating her quarters from the rest of the hut. The Miskito habit of retiring to a provisional ranch or "going to the bush" (M.: *untara dimaya;* T., P.: *asnipas kana;* U.: *asnipas awas*) has never been practiced by the Sumu, and it would appear as if it was in former days also unknown among the Miskito. In fact the Sumu state that the menstruous woman must keep away from the bush, where she might be attacked by jaguars, pumas, or snakes, or where she might be seduced by a spirit in anthropomorphic or zoömorphic form. When the three days are over the woman takes a steam bath at home. The latter is prepared by heating a few large white stones and then pouring water upon them, while the woman will bend over them with a thick blanket thrown over the naked body. After this she is no longer considered unclean.

Celibacy.—Celibacy is considered as something abnormal and uncanny among the Indians; people leading presumably an irreproachable celibate life are supposed to practice sexual intercourse with spirits. 589

Prostitution.—Prostitution is now met with among the Miskito inhabiting such settlements as have a large percentage of foreigners or Ladinos, but this has never been a recognised institution as among the more civilized tribes of Mexico and Central America. 548

Polygamy.—Polygamy exists, but it is not very common, and is generally limited to men of rank, as sorcerers. I have known Indians with 4 and even 5 or 6 wives, who all lived under the same roof. Each one of the women had her own hearth and cooking utensils and she prepared the food for herself and her children. The husband ate wherever he preferred. When he wished to buy something for his favorite wife he must treat the others alike in order to avoid scenes of jealousy which, it must be said, are very rare. The women have rarely a dispute with each other; sometimes they are all sisters, the eldest one, however, being generally the mistress of the house. They call each other *lakma* (M.) or *kahkā* (S.). Sometimes an Indian with wife and children may adopt a young orphan girl with the intention of making her his wife when she arrives at puberty. 595

According to Henderson (223) the Miskito King George, who governed at the beginning of the nineteenth century, had as many as 22 wives. M. W. (206) and Sloane (a: I, p. lxxvii) mention the existence of polygamy for this tribe; elsewhere, however, the

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Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

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Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

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Maize is believed to be unimportant except in the higher lands, e.g., among the *Ulua*. The *Jicaque* grow it as a commercial crop but do not use it extensively as food. Pineapples are important to the *Paya*. Chili peppers and opuntia, the latter used for raising cochineal, a dye-producing insect, appear to be recent introductions. Plants introduced by the Europeans vary in importance, but plantain is now one of the most basic foods of the region. Quantities of wild foods of all kinds form an important part of the diet.

Hunting.—The bow and arrow was once important to many tribes but has been partially or wholly replaced by the gun. The bow has not been reported from the Corn Islands. Spears or javelins were formerly used for hunting. Slings, traps, and snares were used prinicipally for birds. For the blowgun, see page 224.

LIST OF FOODS GROWN BY THE PEOPLE IN THE CARIBBEAN LOWLANDS:

AMERICAN ORIGIN:

- Sweet manioc.
- Bitter manioc.
- Maize.
- Pejivalle (pejibaye) palm.
- Sweetpotato.
- Eddoe (tania).
- Gourd.
- Pumpkin.
- Squash.
- Chayote.
- Tomato.
- Bean (red and black).
- Pineapple.
- Tobacco.
- Cotton.
- Achiote (*Bixa orellana*).
- Cacao.
- Peanuts.
- Papaya.
- Avocado.
- Guava.
- Chirimoya.
- Zapote.
- Coconut.
- Ussi.
- Ficus.
- Yam.
- Opuntia.
- Peanuts.

FOREIGN ORIGIN:

- Rice.
- Sugarcane.
- Coffee.
- Mango.
- Breadfruit.
- Tamarind.
- Citrus fruits.
- Plantain.
- Banana.

Hunting is exclusively a male occupation. Communal hunts lasting several days and hunting by torchlight have been reported. Dogs are used frequently to chase the game. Hunters may imitate the calls of animals, sometimes using bone whistles.

Fishing.—Women fish with hooks, which were originally made of bone. Men fish in groups of varying sizes. Fish are shot with the bow and arrow, speared with single- or multipronged spears, taken with traps of various types, or frightened so that they jump into canoes. Torches are used at night to attract the fish. Fish are poisoned by parties of men. Women and men whose wives are pregnant or menstruating cannot join such expeditions (*Jicaque*). Rotenone-bearing plants are crushed in the water above a weir from which the stupefied fish are removed.

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595 last-named author (b: IV, 279) states that the Miskito have only one wife. Dampier (I, 9) and Jeffery (45) likewise state that the Miskito marry but one wife with whom they live until death separates them.

586 DIVORCE.—Occasionally husband and wife separate by mutual consent, the children remaining in charge of the mother. A woman is generally abandoned by her husband if she does not give birth to any children. The young husband does not remain at the hut of his parents-in-law when he is sick, but returns home to undergo treatment; in case his disease is incurable, or if he is lazy or cruel, he may not be admitted again at the house of his parents-in-law, and the marriage is then considered dissolved. The husband has, however, the right to claim payment for all the presents he has made to his wife or to her family.

587 REMARRIAGE.—If a widow wishes to remarry she must be bought from the heirs, that is, the relations of her dead husband. Such a payment is known as "widow money" (M.: *pyarka mana;* T., P.: *tiñmak minit;* U.: *pyarka makalnak*). The widow is considered the property of her husband and with the death of the latter passes to his relations.

In no case is a widow allowed to remarry until the festival of the dead (M.: *sihkro, sikro;* S.: *sáu*) has taken place, which is about one year after the death of her husband. In case the future husband agrees to have this festival celebrated at his own expense, he need not pay anything else for the widow. The author who wrote about 1699 under the initials M. W. (309) was evidently mistaken in stating that among the Miskito the widow was allowed to remarry three days after the death of her husband. According to Exquemelin (Engl. edit.: 254), who wrote about the same period, this action could not take place until two years later.

CHILDREN: THEIR BIRTH AND EDUCATION

• 844 SECLUSION AT CHILDBIRTH.—The prospective Miskito mother occupies a small hut (*dáukan watla*), built for her by her husband in the bush, at a short distance from her home, just as she does during the menstrual period. She remains there about two weeks, accompanied by a female relation or friend. She has to observe similar regulations as at the menses, for she is considered impure and may pollute the house and contaminate the other inmates. She is particularly exposed to attack from snakes, beasts, and supernatural beings, and neither she nor her child must be seen by the sukya. She must also abstain from certain food, not only on account of her own well-being, but also on that of the community as a whole. The Sumu woman, however, accouches in a corner of the hut, which has been screened off either with bark cloth or with thatch.

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A man and woman may agree to marry, or, more rarely, the girl's parents may make marriage arrangements without her consent. Child betrothals are common. Cross-cousin marriage is frequent, but marriage between parallel-cousins and closer relations is forbidden. *Mosquito* and *Sumo* chiefs and shamans have several wives, and the *Paya* of Río Platano and Río Paulaya practice polygyny, as do the *Jicaque*.

Before marriage a man must pass through various ordeals, pay the bride's family an agreed sum, and prepare a field for his prospective wife. The wedding is a simple ceremony. The levirate and sororate are practiced, and the many possible exceptions to this rule are adjusted by payments. A man may abandon his wife if she is barren. Divorce is accomplished by means of payments to the families of offended parties. The woman always keeps the children. Among numerous relationship taboos are the important mother-in-law taboo and the prohibition on a man's speaking to his sister-in-law and to other close female relatives by marriage.

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SA15 Mosquito SA15

handles.[14] These conditions are not yet apparent on the hands of children.

HAIR.—All these Indians have an abundance of hair growth extending very low over the forehead, but it is very scarce on the other parts of the body. The hair is usually black, and very straight and coarse, but occasionally hair with very long low waves may be met with among the pure Indians. Gray and white hair occurs sometimes but not by far as frequently as among the white race. Baldness is practically unknown. Beard growth is very scarce, while chest hair is totally absent among the pure Indians.

LONGEVITY.—There are no reliable figures to be obtained regarding the age of the older Indians. Very few of them seem to have passed their sixtieth or seventieth birthday; still during the years 1917–1922 the writer met a number of Indians who were about 4 to 6 years old at the great eruption of the volcano Cosegüina on the Bay of Fonseca in 1835. This catastrophe, which was accompanied by great earthquakes, is still spoken of by these Indians as the "Great Darkness" (M.: *tikmya-dara;* S.: *puk-sani, puk-barak*);[15] a thick rain of ashes poured over the coast at the time and the sun was as invisible as at night.

DEFORMITIES.—In former days deformed children were not allowed to grow up; they were either buried alive or left to starve. This accounts for the rare cases of deformities encountered among these Indians. Only the strong and healthy being allowed to grow up and produce children, there is little variety of physical and mental development. Even were such a deformed child allowed to grow up, it would not easily find a mate and would die without leaving any children behind. In civilised countries deformities are propagated, as such people will find someone to marry them if they have fortune.

If an Indian has some deformed limb, either brought with it into the world or the result of an accident, he will secrete it as much as possible from the sight of other people, as such is considered a great disgrace. It would be an insult to ask him to show it or to even refer to it.[16] In case of a dispute among Indians one will immediately pick out the weak points in the personal appearance of his adversary.

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[14] See the illustration given by Schultz (69).

[15] The abbreviations for the tribal names used in the present study are the following: M.=Miskito; S.=Sumu; T.=Twahka; P.=Panamaka; U.=Ulwa.

[16] At the Sumu village on Rio Coco the writer knew a Miskito who had lost several fingers on one hand through an accident at the gold mines of Pispis; from that time on he always carried a bandage around the mutilated hand. In the same village a young boy, having lost several toes, was continually wearing a shoe on that foot, although the other foot was always bare.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

624 chiefs, called by the Miskito name *wita* or *wihta* (lit.: "head"), resided in the larger villages.

648 Now the government of the two republics, Honduras and Nicaragua, is represented by *comandantes*, who are invariably Ladinos. Indian *subcomandantes* are occasionally named in the larger areas, but their authority is practically insignificant. Some deference is also paid by the Indians to the elders of the settlements, and especially to the sukya. The officials despatched from Tegucigalpa or Managua are rarely of the better element, and have at times committed great abuses among the timid and peaceful aborigines. They are too frequently men of low morals who try to enrich themselves by imposing fines upon the Indians, which are put into their own pocket, or by compelling the natives to work for their personal benefit.

LAWS: CRIME AND ITS PUNISHMENT

627 ADMINISTRATION OF JUSTICE.—In former days the punishment of criminals was intrusted to the individual wronged rather than to special officers of justice. If the injured person did not take any steps to revenge himself he was considered a coward.

177 Toward the middle of the eighteenth century, when British influence
692 spread to the "court" of the principal Miskito chief, special officers,
681 known by the name *kwatmas* (from the English "quartermaster") were intrusted with the execution of government orders and the administration of justice. Punishment was inflicted in the shape of fines, flogging, and death by hanging; prisons were unknown. On their periodical visits these officers used to whip all the young people whom they could seize, in order to cure them of their laziness and stinginess, apparently whether they were guilty of the charge or not. This was called "teaching the people" (M.: *upla smalkaya;* S.: *möh sumalnin, möh sumalnika*) and had the object of inculcating principles of good conduct and morality. An account of such proceedings is given by Bell (b: 278–282).

685 THEFT.—A thief was compelled according to Indian law to restore twice the value of the stolen object.

●847 INFANTICIDE.—This was apparently not considered a crime in former days under certain circumstances. (See Children: Their Birth and Education.)

683 BODILY INJURY.—For any bodily injury, whether done intentionally or not, a payment of "blood money" (M.: *tala mana;* T., P.: *a minit;* U.: *awas makalnak*) was collected.

682 MURDER.—A murderer had to follow his victim into death. If he should not do so voluntarily, the relations of the murdered man might kill him without risk of punishment; besides, in that case, his memory would be dishonored. The *lex talionis* was applied rigidly.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

826 heard the peculiar sound produced by two trees rubbing against each other during high wind.

842 STERILITY AND ABORTION.—Sterility is considered a disgrace, and the average husband will abandon his wife if she is unable to bear children. Abortion and prevention of pregnancy are accomplished by the use of certain herbs. In general the Indian woman is very prolific, but infant mortality is also very high.

[847] [165]

847 INFANTICIDE.—In former days babies of the female sex were often exposed and left to die, as they were supposed to bring ill luck. Male children are always received with great joy, which the father manifests by shooting off his gun. Deformed children were buried alive in olden days, as they were supposed to be possessed by an evil spirit, or to have been begotten by such one. A similar belief is held by many other tribes in both Americas and accounts for the total absence or scarcity of crippled persons in such regions.

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2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among the *Mosquito* and *Sumo* a man who has been wronged is considered a coward if he does not avenge himself. If revenge fails, both the offended man and the perpetrator of the offense are supposed to commit suicide. A thief, when caught, must return double the amount stolen. A creditor may help himself to his debtor's property, or he may destroy the property of a third person, in which case the debtor must pay the damage (*Mosquito*). An adulterous wife is beaten and forced to reveal the name of her lover, who is fined. A murderer is killed, unless he commits suicide, and his memory is dishonored. There is, however, no dishonor in poisoning an enemy, the method employed for most murders.

SOCIAL ORGANIZATION

A man and woman may agree to marry, or, more rarely, the girl's parents may make marriage arrangements without her consent. Child betrothals are common. Cross-cousin marriage is frequent, but marriage between parallel-cousins and closer relations is forbidden. *Mosquito* and *Sumo* chiefs and shamans have several wives, and the *Paya* of Río Platano and Río Paulaya practice polygyny, as do the *Jicaque*.

Before marriage a man must pass through various ordeals, pay the bride's family an agreed sum, and prepare a field for his prospective wife. The wedding is a simple ceremony. The levirate and sororate are practiced, and the many possible exceptions to this rule are adjusted by payments. A man may abandon his wife if she is barren. Divorce is accomplished by means of payments to the families of offended parties. The woman always keeps the children. Among numerous relationship taboos are the important mother-in-law taboo and the prohibition on a man's speaking to his sister-in-law and to other close female relatives by marriage.

LIFE CYCLE

Childbirth.—The *Paya* and *Mosquito* build special confinement huts; the *Sumo* partition off a corner of the house. During parturition the mother is aided by another woman who cuts the cord with a piece of bamboo. The afterbirth and umbilical cord are buried. Among the *Paya* a midwife is regarded by parents and child as a blood relative. This belief is said to have originated among the *Mosquito* and diffused to the *Sumo* and *Paya*. The second of twins and deformed children are killed (*Mosquito* and *Sumo*). Some female children were killed at birth.

Sumo and *Mosquito* women bathe immediately after bearing a child, *Paya* women on the third day. *Sumo* women take a steam bath but use no special structure; in other tribes they bathe in the river. This bath ends a period of ritual impurity. *Mosquito* women, however, are considered impure for one or two weeks. Women also observe a special diet. The return of the mother to the house is celebrated with a ceremony.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

CERTAIN SPECIFIC NUTRITIONAL FACTORS IN COMMON FOODS 146
(Per 100 Grams portion)

	Salt Na Cl. gms.	*Calcium* gms.	*Iron* gms.	*Thiamine* mg.	*Niacin* mg.	*Ascorbic Acid* mg.
Fish:						
Snook	.301	.016	.0016	.06	3.16	
Bass	.202	.028	.0020	.07	2.10	
Monkey	.112	.010	.0028	.092	4.98	
Parrot	.116	.014	.0020	.09	4.36	
Reef	.120	.017	.0032	.082	5.83	
Conmete	.192	.020	.0014	.02	.42	
Banana	.131	.006	Trace	.04	.20	7.0
Avocado	.018	.016	.0010	.05	.90	18.0
Orange	.009	.024	Trace	.06	.36	52.0
Lemon	.005	.025	Trace	.01	.08	72.0
Grapefruit	?	.020	Trace	.03	.10	64.0
Cheese (commissariat)	?	.164	.002	.04	.08	

The intakes of salt average between 1-2 gms. daily; iron between 7-14 mg.; calcium from 0.4-0.9 gms.; thiamin from 0.5-1.0 mg., and niacin from 10-20 mg. During January, February, March and April, the ascorbic acid consumption is low, approximately 10-15 mg. a day. From May to July there is a slight increase of about 5 mg. more in the dietary, while from August to December the intakes will be from 150-300 mg. daily due to the high consumption of citrus fruits, the high intake during this period affords sufficient protection of health during the subsequent period under a maintenance regime.

Clinical findings as regards nutrition. Anemia is the most prevalent finding among children of the Coco River Basin, and what is amazing is the way children tolerate rather drastic reductions in hemoglobin content. Admittedly, altitude is no problem in this region so that at least there is no demand for an increased oxygen capacity of the blood. On the other hand it is impossible to differentiate, clinically, between children having a blood hemoglobin content of 8.0 gms., and those with 13.0 gms. per 100 gms. of whole blood. Furthermore, if the anemia is improved by the use of iron salts the parents may or may not note a difference in the child's behaviour, clinically the difference cannot be detected except in rare instances. In the more severe anemias children complain of lassitude, fatigue, restlessness and lack of energy.

The primary cause of anemia is the type of diet used in early infancy. The child is placed at the breast as soon after birth as possible and is fed whenever it cries. Irregularity in feeding seems to be of no bother to the parents. However, during teething the mother automatically reduces the number of times a day a child is placed at breast since both

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

irritate the nipple and causes discomfort to the mother. It is at this point that considerable supplementary feeding is introduced. It is of interest to note that the teeth begin to make their appearance at about the fourth to fifth month in contrast to the average of six to seven months in the United States. The fact that iron reserves are exhausted at about the third month and that supplemental feeding occurs shortly thereafter is a curious coincidence favoring the child.

The Indians believe that food consumed by the mother produces milk and for this reason the mothers eat often and large quantities of food. The children are fed bananas early in life and even if the iron intake from milk supplemented with bananas amounts to 4 mg. a day, it is insufficient to adequately overcome physiological hemoglobin depletion. Theoretically this would soon be made up by foods rich in iron. This in fact is what is attempted by the natives themselves but the anemia is not generally overcome because just as soon as the children begin crawling outdoors form infestation occurs and a relative anemia may be maintained.

For practical field use, hemoglobin determinations were carried out using the Sahli equipment and 100 per cent hemoglobin was computed to indicate 15.6 gm. per cent hemoglobin in blood. For purposes of comparison between hemoglobin levels in Guatemala, Yucatán[82] and the Coco territory of Nicaragua, the averages represented:

Guatemalans (691 cases, Shattuck)	73.3 per cent
Yucatecans (2887 cases, Saunders)	71.9 per cent
(1261 cases, Shattuck)	70.6 per cent
Coco River (100 infants, Pijoán)	55.0 per cent

It is admitted that the method of hemoglobin estimation varied, i. e., Shattuck used the Tellquist method, whereas the Sahli method was used in the Coco study. Regardless of this fact, there was less altitude in the Coco Basin to provoke hemoglobin increases and secondly the incidence of insidious disease seemed greater.

Hemoglobin values in 100 infants (2-3 months old) in Zapote and Waspam, Coco Basin, Nicaragua.

Number of Infants	*Hemoglobin value*
29	60-70 per cent
48	50-60 per cent
23	40-50 per cent

Another point of difference between this study and the others is that the findings by Shattuck was fairly representative of his territory

[82] Shattuck, G. C. A Medical Survey of Guatemala. Carnegie Institution of Washington. 1938.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

302 other hair on the face, except that of the eyebrows and eyelids. The growth of beard was not liked and the hair was pulled out with the aid of two small thin sticks, between which they pinched it and plucked it out. A small stick of wood which had been partially split was also used for that purpose. Certain wood ashes were rubbed into the skin to check the growth. Now light beards and mustaches are sometimes met with.

DEFORMATION OF BODY

304 HEAD.—Head deformation (M.: *lal tasta dawkaya;* T., P.: *tus labanin;* U.: *tun labanaka*) was until quite recently practiced by all the Sumu tribes except the Bawihka. The little child was placed in a sort of cradle (M.: *kukaná;* T.: *pala;* P., U.: *lim*), which was suspended by means of bast-fiber ropes attached to the roof, so that it could be swung like a hammock. A folding flap of wood or of the "bratara" reed at the top of the cradle was tied firmly to the crown of the head, a thick layer of cotton being applied to prevent injury. The infant was kept in sitting position and secured in the cradle in such a manner that it could not move the head at all. From time to time the bandages and the folding flap were removed in order to allow the child a little freedom. The mother suckled her baby without unswathing it from the board. The object was to flatten the top of the head, as the ordinary-shaped head was considered ugly. Some Indians told me that they did not like to have such a round head as a monkey. Grossmann (b: 4) states, however, that the head was flattened in order to adapt it to the broad, flat cap which is worn at festivals. As the Sumu wear the hair hanging square cut to the eyebrows in front, the peculiar flatness of the skull may escape the casual observer.

[304]

At the present time this practice has been abandoned altogether and the cradles have been replaced by hammocks. The first mention of head deformation among the Sumu appears to have been made by M. W. (304, 305, 307). A short description thereof as practiced by the Ulwa of Rio Escondido is given by Collinson (b: 149–150). The Miskito claim to have never practiced head deformation and they call the Sumu derisively *Lal-tasta* "Flat-head," which word corresponds to the Spanish "Chatos" found in the old documents. One of the early writers claims, however, to have observed the custom among the Miskito of Sandy Bay in 1709;[20] it is very likely that the Indians in question were Sumu slaves.

[20] Estos monstruos de las cabezas chatas tienen la costumbre de entablillarles a las criaturas cuando nacen, y en creciendo les falta la faccion de la frente, sin distancia alguna del pelo de la cabeza a los de las cejas, que les hace imponderablemente horribles (Alcedo y Herrera: p. XVIII).

1: Conzemius M-4, 5 (1921) 1932
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HOUSEHOLD FURNISHINGS

352 BEDS AND TABLES.—The primitive Indian bed, which has practically disappeared, consisted merely of a layer of tree bark, Heliconia leaves, or deer skin, spread on the ground; it is known among the Miskito by the name *puklak taya* "balsa tree bark," while the Sumu call it *takal* (T., P.) and *lim* (U.).

Nowadays stages of split bamboo serve indiscriminately as beds and tables. These structures (M.: *kribri;* S.: *kirikiri*) are raised about 3 feet from the ground and are supported by four strong posts. Instead of sheets of bamboo the whole may be covered with wild cane sticks. Sheets of pounded tree bark serve as blankets
513 and as bed sheets (M.: *nina-pala, wunta-pala;* T., P.: *daŝ-rina;* U.: *daŝ-paknak*); in Honduras the Miskito also use mats (*tuasi*) made from a rush growing around the swamps and lagoons. Pillows (M.: *tilar*, corrupted from the English; S.: *tunana*) are stuffed with cotton
[834] or the fiber surrounding the seeds of the silk cotton and of the balsa trees. The Miskito living at the mouth of Rio Patuca slice the upper part of the stem of the small "palmetto" palm, which grows in the neighborhood, and use the thin flakes to stuff pillows and mattresses.
[439] The mosquito nets, called *pabulo* by both tribes, are made of opaque cotton sheeting of foreign manufacture, so that each bed forms practically a separate compartment.

HAMMOCKS.—While at home, hammocks (M.: *silmika;* S.: *wak*) are seldom used during the night, and then only by unmarried boys and girls. They are, however, carried along on long journeys. During the day the men dream away much time in the hammocks, but the women use them rarely. They may be made of cotton, tree bark, or Bromelia fibers.

● 857 CRADLES.—In former days cradles (M.: *kukaŝ;* T., P.: *pala;* U.: *lim*) were used by the Sumu in connection with the habit of flattening the heads of babies. (See under Deformation of body.) Since this practice has gone out of use cradles have disappeared entirely and small hammocks are now used for the children. The dried claws of crabs and other objects were tied to the cradle, making a strange rattling noise at each movement.

352 STOOLS.—Low wooden stools (M.: *sulasi;* T., P.: *sini;* U.: *panba*) with three or four legs and a flat or concave surface, hewn from solid blocks of wood, are used by the women, unless they sit directly on the ground. They may be square or oblong and suggest the stone metates found in the ancient sites. They range in size from diminutive forms used as toys by the children to benches of over 3 feet in length. When a stranger arrives at the Indian hut one of these seats or a hammock will immediately be offered to him.

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2: Kirchhoff E-4 (no date) 1948
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wore tight cotton bands below the knees and above the ankles. Today 301
woven bands of glass beads are worn around the neck, wrists, and ankles.
Straw hats are decorated with feathers and jaguar teeth (*Mosquito, Paya*).

Black paint is smeared over the body by the men (*Sumo, Mosquito,* 302
Paya) as a decoration and for protection from insects. Geometrical de- [751]
signs are drawn in red paint, mainly by the women. The *Sumo, Mosquito,* [50]
and *Paya* tattooed geometrical designs upon the face, arms, and breast. 304
The *Sumo* men made ornamental scars on their faces and chipped their
teeth. All *Sumo* tribes except the *Bawihka* practiced head deformation.
During infancy a folding flap of wood at the top of the cradle was tied
firmly to the crown of the head.

TRANSPORTATION

Loads are carried with a band passing over the head (women) or 482
across the chest (men). Children are carried on the back in a blanket, [855]
the points of which are tied in front. [87]

The country has hunting trails but no roads. Most travel is done 501
in dugout canoes propelled with poles and broad-bladed paddles. Rafts
are used for down-river traffic. Large keeled canoes, often equipped
with a sail, are used at sea.

MANUFACTURES

Basketry.—Crude baskets, mainly of wickerwork, are made chiefly for 285
storage bins. Bark and silk grass fiber bags are very common. Bark
fiber is used also to make tumplines, hammocks, and such.

Bark cloth.—Bark cloth is beaten out of ficus-tree bark with a grooved 287
wooden mallet.

Weaving.—Cotton is spun on a spindle, which has a whorl and is 286
rotated in a gourd. Coarse-textured but soft cotton cloth is woven on a
two-beam loom. Thread was formerly dyed and designs were woven in
the cloth. Sometimes feathers, particularly a fringe of white Muscovy
duck down, were incorporated into the fabric.

Ceramics.—Pottery making has been described only from the *Sumo* 323
and *Paya*, although pottery was formerly made by all tribes. Women
model small vessels out of a lump of clay but build up large ones with coils.
They polish them with a pebble, dry them for several days, and fire them
in the open. Pottery types include jars about 4 feet (1.3 m.) high, various
types of jugs, water jars, small bowls, griddles, and tobacco pipes. All
vessels have a convex base.

Miscellaneous manufactures.—Metates are still used by the *Paya* 445
and *Sumo*, and they have recently been adopted by the *Jicaque*, but the
Mosquito are said no longer to use them. Metates are flat-topped boulders,
which only rarely have a trimmed surface. Manos are round pebbles.

1: Conzemius M-4, 5 (1921) 1932
SA15 Mosquito SA15

and fish. The girls stay at home and learn the domestic arts, and they accompany the mother when the latter fishes with the hook or goes to the plantation. 868

Old men are very fond of teaching or lecturing (M.: *smalkaya*; T., P.: *sumalsaia*; U.: *sumalsaaka*) to the young men whom they generally accuse of being very headstrong; this practice is also current among the old women with regard to the girls. The hearer's ancestors are always represented to him as models of virtue and good conduct. This form of teaching corresponds roughly to that of the sermon in Christian and other churches. 861

DEATH AND MOURNING

AGONY.—The Miskito, as well as the Sumu, formerly used to starve those who were near the point of death, thinking that it was of no use to keep on feeding them. The Sumu are said to have carried the moribund in the bush to let him die there so as not to be compelled to move away, for in former days the settlement was abandoned at the occurrence of such a calamity. Occasionally a dying person was strangled to relieve his sufferings; first, however, his vitality was tested by placing him in an awkward position, and if he remained motionless, he was choked. In general it must be said that the aged and the sick are much neglected, but there are, of course, many cases to be cited to the contrary. 734 763 [888]

DEATH.—Death is supposed to be due, not to natural causes, but to the agency of sorcery or evil spirits. A gun is sometimes fired off at the occurrence of a calamity, in order to clear the house of the demons. The women relations of the deceased immediately try to injure themselves by knocking their heads against the house posts, or they attempt to commit suicide by hanging or drowning. All this is, however, only pretense to a large extent, for they know that they will be prevented by the other persons present from harming themselves; they rarely make any effort to injure themselves when there is no one about. 761 763

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SA15 Mosquito SA15

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The men taking part at the ceaŝ *ldbuana* had the whole body painted black and were nothing but the loin cloth. They had to be ceremonially "pure" (*suwa*), a condition which was obtained by abstinence from women, salt, red peppers, and intoxicating liquor. Any one daring to come to the festival in a state of "uncleanness" was supposed to be killed by an awful giant, some sort of evil spirit, which came from some neighboring hill, and walked about the house with a quiver full of arrows. He was well treated and given plenty of *pupus* (maize liquor), for every one was afraid of him.

At the ceaŝ *ldbuana* trials of endurance took place in order to train the young men in supporting pain without the slightest groan. They also had the object of settling disputes which had been in suspense for some time. One man leans over and lets his opponent strike his back as hard as he can with the point of the elbow, until the latter is tired of punching. He is not supposed to utter the least groan nor show any other sign of pain. From time to time he merely says *yaŝ al yaŝ*, "I am a man," whereupon his adversary replies *yaŝ bik al yaŝ*, "I am also a man." When the latter is tired of punching the two men change places and he has to submit to the same rough treatment of his back by the other. Anyone giving up the struggle before his opponent is tired of striking is considered a coward; occasionally death has resulted from the effects of these terrible blows.

This method of fighting is unknown to the Miskito. The latter box a little, but it seems to be a point of honor with them to give and take blows in turn, and not to try how often they can strike each other as much as how long they can stand up to it.

PREPARATION OF AN EXPEDITION.—When the Miskito projected an armed expedition against the other Indian tribes or against the Spaniards they consulted one of their principal sukyas in order to hear if they would be successful. If the sukya's prediction, after having consulted the spirits, was unfavorable regarding the issue, the intended expedition was abandoned (M. W.: 307–308).

Both of these tribes were in the habit of painting the body hideously, perhaps with the object of scaring the enemy. Fair fighting was unknown. Attacks were carried out during the night, the enemy being taken by surprise.

INTERTRIBAL WARS.—The Miskito and Sumu were continually at war with each other as far back as the seventeenth century (Dampier: I, 9–10; M. W.: 300, 302, 305). These tribal wars continued throughout the eighteenth century and turned out to the advantage of the Miskito, who, having received European arms through the agency of the buccaneers from Jamaica, were able to conquer several subtribes of the Sumu from whom they collected tribute in the shape of canoes, deer skins, maize, cacao, rubber, etc.

1: Conzemius M-4, 5 (1921) 1932
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supposed to attract the same species and entice it within gunshot.[illegible] 224
The bones, teeth, and skulls of animals killed in the chase are said to 777
have the same power. This explains the presence of animal jawbones, deer skulls, jaguar teeth, and plumes and beaks of birds in every hut. But they are not only preserved as charms but also as trophies, of [523]
which the owner is very proud; he will always take pleasure in relating the circumstances under which he killed the game in question, and that in the most exaggerated and animated fashion. Certain objects are also worn as talismans to prevent being harmed by the spirit of the animal killed.

WARFARE

WARRIORS HELD IN GREAT ESTEEM.—These primitive people were 701
very warlike by nature in former days and all men were soldiers in case of conflict. Honors depended largely upon success in war. We know that among the Miskito brave warriors were held in great esteem. They were called *taplu* or *tahplu*, a word reminding of the term *tapaligui*, which was applied, according to Oviedo, among the Nicarao, Chorotega and Chontales to men who had won a hand-to-hand fight in sight of the armies; they were rewarded for their bravery by admission to various warrior classes.

MILITARY TRAINING.—The bow and arrow used to be the principal 702
weapon of both tribes under consideration. (See Hunting and 868
Fighting Implements.) From early childhood on the Miskito boys practiced with toy weapons made for them by their fathers. They were able to strike off arrows shot at them, with the aid of a small stick not bigger than the rod of a fowling piece, provided only one was thrown at a time (Dampier: I, 8).

Up to about 50 years ago the Sumu organized from time to time 702
great festivals, called *asañ lâkwana*, in order to undergo some sort of military training and take the necessary steps to defend their territory against the invasions of the Miskito or the Spaniards. They took place in some secluded part of the forest, where no stranger was liable to intrude, but all the Sumu men from far away made it a point of honor to be present. The women were, however, never admitted, as [562]
they were always connected with ceremonial impurity; they remained at an adjoining hut and there prepared the food which was carried to the festival by a number of young boys.

[illegible] There is a story current among the Sumu about a spotted variety of deer which is extremely rare. If the animal sees the hunter first, the latter will not be able to get it, as none of the shots fired at it will hit. If, on the other hand, he sees the deer first and is able to wound it mortally, the dying animal will vomit a stone; the possession of the latter will enable the hunter to kill many deer in the future. A similar virtue is ascribed by the Ladinos to the green Amazon stones or "piedras hijadas" (*Lapis nephriticus*).

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The name of the deceased person must never be mentioned in the presence of his or her relations, to whom that would constitute a grave offense. The spirit is always an object of dread and it hovers around its former home; it is feared that it might materialise by pronouncing its name.

3: Pijoan D-5 (ca. 1945) 1946
SA15 Mosquito SA15

304 with reference to the head, a custom which had not been practiced by the Miskito. It is no longer performed by the Sumu during the present day.

621 629 There is no trace of any division in class or exogamic kinship groups. Before the conquest, the Miskito were not ruled by supreme chiefs, but in time of war the elders would choose some young warrior, noted for prowess, to guide the activities of the group. Generally, though, they were not a warlike people. Hereditary chiefs were introduced by the British and the ruler became despotic in activity. His orders would be carried out by quarter masters *(kuntmas)* or by other members of his staff. Foreign traders extended gifts to the Chief (King) for trading privileges and the Indians rendered assistance and taxes. However, the Indians in the interior paid but little attention to this hierarchy. Today there are village chiefs who guide the civic affairs of the community on what appears to be a democratic basis. Decisions are made as a result of council meetings where considerable discussion may take place.

648 The governments of the two republics, Honduras and Nicaragua, have territorial representatives known as comandantes and these are *Ladinos* (see Appendix B). The comandante may have other *Ladinos* on his staff or as is often the case works in close collaboration with the traders. In the upper Coco River the comandante is stationed at San Carlos. He patrols the area, listens to complaints and his decisions are autocratic. He is in military uniform and his status is one of army discipline. The various companies, i. e., fruit enterprises, rubber development agencies, etc., have many *Ladino* foremen who work in close harmony with the comandante. From the Indian point of view considerable friction exists between himself and the government representative. Since the Indians have no recourse with the Central Government, the jurisdiction of their problems rests with the territorial representative. The Indian complains that there is misappropriation of funds and that traders take endless advantage of them. Regardless of right or wrong, conflict exists and as such it is probably due to the lack of peoples' representation in territorial jurisdiction. Government education is at minimum, the various religious missions have generally performed this service to the better satisfaction of the Indians. The Indians live with great equality, there appears to be no rich or poor among them; they do not strive to accumulate wealth.

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674 626 Within the villages themselves government takes place with the elders guided by a chief. A thief is compelled to restore stolen property and an adulterer pays a fine of a gun or a cow. Stealing is rare, except in the more urban areas and adultery is uncovered usually as a result

2: Kirchhoff E-4 (no date) 1948
SA15 Mosquito SA15

Among some tribes, this ceremony is repeated at a later date. The *Sumo* are said to have practiced circumcision. The couvade is general.

Individual names are derived from some peculiarity or mannerism. Such names were not used to address a person, especially older people.

Puberty.—Puberty ceremonies consist of tests, the details of which vary from tribe to tribe. *Sumo* boys receive serious military training at puberty.

Menstruating women are considered to be impure and are confined to a corner of the house (*Sumo*) or to a special hut (*Mosquito* and *Paya*). They are cleansed by bathing or, among the *Sumo*, by a steam bath.

763 Death.—Death is thought to be due to sorcery or to the machinations of evil spirits. People about to die are abandoned in the bush, or they may even be killed. If a person dies in a village it has to be abandoned.

764 The dead are usually buried in the dwelling, which is abandoned (*Paya*), or, among some tribes, in a special hut. The corpse is placed in a coffin made of a canoe wrapped in bark cloth. Personal belongings, food, and a dog are placed in the grave. Among the *Mosquito*, corpses were sometimes sewed in a mat and placed upright in a grave, facing the east. Slaves, servants, and sometimes a shaman were killed and buried with *Mosquito* chiefs. Early reports of the mummification of chiefs appear to be exceptional and may refer to other tribes. Clay and gold masks of chiefs are reported from one locality, probably *Sumo*.

765 The dead were mourned in many ways. The relatives cut their hair short, wept, and fasted. A mourning ritual included attempts at suicide, which friends prevented. The women sang songs in praise of the dead. Anniversary ceremonies, held at varying intervals, were intended to appease evil spirits and to aid the soul on its long journey to the hereafter. Shamans invoke the soul in order to discover who was responsible for the death and to ascertain future needs. About a year after death the *Mosquito* hold an elaborate anniversary ceremony, in which face masks and other paraphernalia are employed. The *Sumo* have similar ceremonies which differ in detail. Formerly, a *Mosquito* woman exhumed the bones of her husband and carried them in a bag for a year, subsequently hanging them in the house. She might not remarry for 2 years.

768 According to Von Hagen (1943), *Jicaque* death and burial customs are a curious mixture of Christianity and their own beliefs. After some preliminary mourning the body, clothed in the garments in which the person died, is wrapped in cloth or bark cloth and buried in the cemetery. A small wooden cross is put at the foot of the grave, and a pot through which a hole is punched is laid at the head. The cemetery is an enclosure on a hilltop, which is walled off, as are Spanish cemeteries.

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721 Most of the information concerning warfare pertains to the *Mosquito*, who were highly organized for this purpose. Undoubtedly much of this

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